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A Descriptive Survey to Explore Non-Medical Practitioner Roles in Acute Healthcare Settings within the United Kingdom (UK)

Abraham, Jennifer

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Abraham, J.

A Descriptive Survey to Explore Non-Medical Practitioner Roles in Acute Healthcare Settings within the United Kingdom (UK)

By

Jennifer Abraham

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A thesis submitted in partial fulfilment of the University's requirement for the Degree of Master of Research

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Ethics Approval

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A descriptive survey to explore Non-Medical Practitioner (NMP) Roles within acute healthcare setting United Kingdom (UK)

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Coventry University, Priory Street, Coventry, West Midlands, CV1 5FB, United Kingdom.

Technical Support
Email Only
technical@kaj-isis.co.uk

Abstract

Background

Healthcare in the United Kingdom (UK) has undergone significant change which has led to workforce redesign, the extending and advancement of existing health professional boundaries and development of new roles. Of particular note has been the emergence of Non-Medical Practitioner (NMP) roles, designed to enable clinical responsibilities traditionally undertaken by doctors, to be completed by others.

Aim

The study aimed to explore the development and integration of NMP roles in acute healthcare settings within the UK from an organisational and NMP perspective.

Literature Review

A systematic approach to the literature search resulted in the critical appraisal and synthesis of 10 relevant studies which examined NMP roles in the UK.

Methodology

A descriptive survey was undertaken to explore the development, integration, recruitment, education and clinical governance of NMP roles in the UK.

Method

Study A purposively explored NHS (n=156) and Private/Independent (n=90) organisations in England. Study B investigated NMPs in the UK through convenience and snowballing approaches. Self-completed semi-structured online questionnaires were used to collect the data from the respondents. Ethical approval was obtained from Coventry University.

Results

A total of 23/246 useable questionnaires were returned from healthcare organisations (Study A) and 96 successfully completed questionnaires were returned by NMPs (Study B). After descriptive analysis using SPSS and thematic analysis seven NMP roles were identified, distributed throughout the UK. NMPs positively contribute to improving services and patient care. Inconsistencies were found in regulation, grading, education and understanding of NMP roles.

Recommendation

Further, qualitative research is recommended to explore health professionals, patients and NMPs experiences and attributes of the NMP role. Further quantitative research is recommended to capture NMPs clinical activities and responsibilities.

Conclusion

This study fully met the objectives and contributes further to the evidence identifying the value of NMPs as part of the healthcare workforce within the UK. NMPs are perceived to positively improve services and patient outcomes. It has highlighted that NMP roles are commonly undertaken by experienced practitioners. Development is affected by service delivery and national policies. However, several areas of concern were raised which affect integration including clinical governance, regulation, education and understanding of the NMP role.

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Abbreviations

ACP-Advanced Clinical Practitioner

ACPA -Arthroplasty Care Practitioner Association

ACSA- Association of Cardiothoracic Surgical Assistants

AfC - Agenda for Change

AfPP-Association of Perioperative Practice

AHP-Allied Health Professionals

ANP- Advanced Nurse Practitioner

APN - Advanced Practice Nurse

AP- Arthroplasty Practitioner

APAA-Association of Physician Assistant in Anaesthesia

ASP-Advanced Scrub Practitioner

BOA- British Orthopaedic Association

BOS-Bristol Online Survey

CPD- Continuing Professional Development

CQC- Care Quality Commission

CNS- Clinical Nurse Specialist

DH- Department of Health

DHSSPS- Department of Health, Social Security and Public Safety

EACP- Emergency Advanced Care Practitioner

ENP- Emergency Nurse Practitioner

ENT- Ear, Nose and Throat

EWTD- European Working Time Directive

FPA-Faculty of Physician Associates

FY2- Foundation Year 2

FYI - Foundation Year 1

GP- General Practitioner

HCPC- Health and Care Professions Council

HDU- High Dependency Unit

HEE-Heath Education England

HEI- Higher Educational Institution

NES- NHS Education Scotland

NHS-National Health Service

NHSHEE- National Health Service Health Education England

ITU-Intensive Care Unit

IRAS-Integrated Research Application System

MVR- Managed Voluntary Register

NHS- National Health Service

NMC-Nursing and Midwifery Council

NMP- Non-Medical Practitioner

NP-Nurse Practitioner

ODP-Operating Department Practitioner

PA- Physician Associate/Assistant

PA-A- Physician Assistant in Anaesthesia

PCC-Perioperative Care Collaborative

PGD- Patent Group Directive

PRISMA- Preferred Reporting Items for Systematic Reviews and Meta-Analyses

PSA- Professional Standards Authority

PSP-Perioperative Specialist Practitioner

RCN- Royal College of Nursing

RCoA- Royal College of Anaesthetists

RCoEM -Royal College of Emergency Medicine

RCoP -Royal College of Physicians

RCSEd- Royal College of Surgeons of Edinburgh

RCSEng- Royal College of Surgeons of England

REC- Research Ethics Committees

RFNA-Registered First Nurse Assistant

SCP - Surgical Care Practitioner

SFA- Surgical First Assistant

SpR/StR/CT- Specialist Registrar/Speciality Registrar/Core Trainee

SPSS- Statistical Package for the Social Sciences

UK-United Kingdom

URL-Uniform Resource Locator

USA-United States of America

Chapter 1 : Introduction

This thesis will share an exploratory study which focused on Non-Medical Practitioner (NMP) roles within acute healthcare from an organisational and practitioner perspective. Historically an assumption has been made that NMP roles are undertaken by nurses. However, more recently workforce re-design has included other professionals, such as Allied Health Professions (AHPs) and Physician Assistants/Associates (PA) who may now be employed in these roles. The term "Non-Medical Practitioner" was originally used by the National Practitioner Programme, a division of the National Health Service (NHS) Modernisation Agency (MA) (2001) to reflect non-medically qualified practitioners who undertake aspects of work traditionally provided by medically qualified doctors. The Department of Health (DH) used the term "NMP" when publishing the educational curriculum frameworks reflecting the development of new professional roles, such as the Surgical Care Practitioner (SCP) (DH 2006a:3) and Perioperative Specialist Practitioner (PSP) (DH 2007b:4).

A recent report by Royal College of Surgeons of England (RCSEng) (2016:15) which investigated the extended surgical team included various role titles under the term NMP such as SCP, Advanced Nurse Practitioner (ANP), Physician Associate/Assistant (PA) and Surgical First Assistant (SFA). A point of similarity across all of these roles relates to the fact that role holders in all cases are registered, albeit PA roles are registered on a Managed Voluntary Register (MVR), qualified healthcare practitioners, who possess skills and knowledge to enable them to perform duties previously undertaken by medical doctors. Similarly, Gokani et al.

(2016) used the term “Non-Medical Workforce” when exploring the attitudes and experiences of surgical trainees towards these new roles.

Therefore, to provide consistency with previous publications the author of this thesis has adopted the term NMP. For the purpose of this study an operational NMP definition is provided in Figure 1.1.

Definition of Non-Medical Practitioner (NMP) for purpose of this study

A registered healthcare professional working in an extended, advanced role or new role with the purpose of carrying out work previously undertaken only by medically qualified doctors. The term includes Physician Associate/Assistants who are registered on the Managed Voluntary Register (MVR) with the Royal College of Physician (RCoP)/ Royal College of Anaesthetists (RCoA).

Figure 1.1: Definition of Non-Medical Practitioner

The NMP term has excluded ANPs, Emergency Nurse/Care Practitioners (ENP/ECPs), Clinical Specialist Nurses (CNS) and Endoscopists as there is extensive research investigating these roles which has largely viewed them as extensions of nursing roles, rather than roles developed to substitute the input of qualified medical personnel (Sujan et al. 2017; Comiskey et al. 2014; Leary et al. 2008; Joseph, Vaughan and Strand 2015). Those health professional roles included within the term NMP are shown in Table 1.1, and are individually discussed in further detail within appendix 1.

Table 1.1: Health Professional role titles included within Non-Medical Practitioner term

Health Professional role titles which are included within the term NMP
Arthroplasty Practitioner (AP)
Advanced Clinical Practitioner (ACP)
Perioperative Specialist Practitioner (PSP)
Physician Assistant in Anaesthesia (PA-A)
Physician Associate (PA)
Surgical Care Practitioner (SCP)
Surgical First Assistant (SFA)

This chapter provides a contextual background explaining the drivers for redesigning the healthcare workforce within the United Kingdom (UK) to incorporate NMP roles. It also discusses factors which influence the development of NMP roles such as clinical governance, titles, education, regulation and integration of NMP roles within the UK.

Background

Challenges to the NHS and healthcare organisations

Since the inception of the United Kingdom's (UK) National Health Service (NHS) in 1948, there has been a commitment to provide quality care to everyone free at the point of delivery. However, improved technologies, research and knowledge alongside an aging population with more complex and long-term comorbidities has led to increased emergency care and soaring costs which continue to challenge the NHS (Dunn, McKenna, Murray 2016). Improvements have been demonstrated in cancer and cardiac patient outcomes and surgical patient waiting times (NHS England 2014). However, variations in the quality of care provided are evident (Francis Report 2013). Rafferty et al.'s (2007) large cross-sectional data analysis of 3984 nurses surveyed from 30 Acute Trusts and 118752 patient

discharge summaries, suggested hospitals achieved better patient outcomes when staffing levels were optimal. Hence, the Care Quality Commission (CQC) has included staffing as a standard to monitor organisations (CQC 2016). The Five Year Forward View (NHS England 2014) provides an ambitious new vision for the NHS to deliver new models of care, encompassing leadership, further modernising the workforce and making efficiencies of £22 billion by 2021. Yet 95% of Acute Trusts report a financial deficit (Lafond, Charlesworth and Roberts 2016), frequently deficits are associated with high agency staff expenditure and lower payment by results tariff, as NHS staff accounts for 60% of the NHS budget (Lafond, Charlesworth and Roberts 2016). Coupled with an increasing trend in hospital activity since 2009 (Dunn, McKenna and Murry 2016), workforce planning and role redesign are being used to control cost and provide improved access to quality healthcare (Buchan, Seccombe and Charlesworth 2016). Consequently, workforce planning has remodelled existing practitioner skills within teams whilst developing new roles.

Integration of Non-Medical Practitioners within acute healthcare in the United Kingdom

NHS workforce redesign is not a new concept, but was revolutionised by the NHS Plan (2000) and influenced by several other national and European drivers (Table 1.2).

Table 1.2: UK drivers to the development of Non-Medical Practitioner roles

Year	Driver for role redesign	Rational for role redesign	Reference
2000	NHS Plan	Reforming NHS Reducing role boundaries	DH 2000
2001-2005	Modernisation Agency Changing Workforce Programme	Piloted new practitioner roles	NHS 2001
Originally Introduced 2003	Government Targets-Performance Indicators	Meet targets such as surgical operation waiting times & Emergency Admissions	Appleby et al. 2012 DH 2012a NHS 2015 Moore 2017
2007	New Ways of Working for Everyone	Creating more flexibility to health professionals Changing workforce skill mix	DH 2007a
Published 2006-effective from 2009	European Working Time Directives (EWTD)	Undertake doctor tasks due to reduced junior doctor working hours to 48-hour/week	Independent Task Force 2014
2007	Modernising Medical Careers	Changes in medical training- doctors require more supervision. NMPs provide more opportunities for supervision	Modernising Medical Careers 2008
2013	Francis Report	Safe staffing levels NMP can escalate care	Francis Report 2013 Rafferty et al. 2007
2016	Reshaping the Workforce to deliver the care patients need	Workforce development promotes extended and advanced practice role	Imison, Castle-Clarke & Watson 2016

In terms of workforce redesign these policies focused on creating flexibility between health professionals to deliver healthcare. Consequently, practitioners now safely undertake work traditionally performed by doctors (Bohmer and Imison 2013; Swann et al. 2013). NMP roles are employed within acute (Abraham et al. 2016; RCSEng 2016; Miller, Cox and Williams 2009) and primary care settings (Carlisle 2015; Drennan et al. 2014). Hiowever, concerns have been raised that recruiting

existing registered professionals to NMP roles will further deplete the clinical healthcare workforce (Scott 2004; Gokani et al. 2016; RCSEng 2016). Additional concerns were raised that NMP roles may negatively affect junior doctor training (Aning, 2006; Beckwith 2006), albeit these were recently refuted by RCSEng (2016) when extensively reviewing the extended surgical team.

The delivery of sustained improvement is a key consideration in changing practice. RCSEng (2016) and Miller, Cox and Williams (2010) highlighted the majority of NMP roles were introduced by consultants, with limited involvement from Human Resources, Finance or education. Miller, Cox and Williams (2010) reported many NMP roles were initially developed and funded by national practitioner programmes as part of the modernisation pilot scheme. Consequently, many organisations did not apply effective change management strategies nor develop a long-term strategy to fund further posts, hence when pilot funding ceased recruitment declined. New role development requires major national and local support (Buchan, Seccombe and Charlesworth 2016); however the introduction of NMP roles lacked the involvement of many clinical stakeholders (Smith, Kane, Milne 2006; Gray et al. 2010). Stakeholder involvement, which includes clinical staff, is central to successful change management (Hall and Hord 2015) and implementation of new roles (Gopee and Galloway 2017).

A variety of NMP roles exist, differing in title, skills and responsibilities to deliver care. Table 1.3 indicates the clinical specialities where they are employed to deliver patient care. In addition, Table 1.4, page 8, provides a brief overview of clinical practice, skills, responsibilities and regulatory body for each role.

Table 1.3: Clinical areas where Non-Medical Practitioners work

Non-Medical Practitioner role	Speciality	References
Arthroplasty Practitioner (AP)	Orthopaedics	Arthroplasty Care Practitioner Association (ACPA) 2016
Advanced Clinical Practitioner (ACP)	Critical Care/Intensive care Emergency Department	Fleming and Carberry 2011 Swann et al. 2013 Fawdon and Adams 2013
Perioperative Specialist Practitioner (PSP)	General surgery	Abraham 2011
Physician Assistant in Anaesthesia (PA-A)	Anaesthetics	Fisher 2015 Gray et al. 2010 Smith, Kane and Milne 2006
Physician Associate (PA)	Cardiology Paediatric Intensive care General Medicine, Emergency department, gerontology, neuro surgery, orthopaedics, spinal units, cardiology, paediatrics	Collett et al. 2012 White and Round 2013 Ross et al. 2012
Surgical Care Practitioner (SCP)	Cardiothoracic General Surgery Orthopaedic Paediatric Urology Vascular	Alex et al. 2004 Gidlow et al. 2000 Hickey and Cooper 2009 Holmes 1994 Jones et al. 2012 Knight 2009 Kumar et al. 2013 Martin et al. 2007 Newey et al. 2006 Quick 2013 Quick 2014 Tingle et al. 2016
Surgical First Assistant (SFA)	Operating Department	Cuttell 2013

In reality, NMPs clinical skills depend upon the primary regulatory status of the practitioner. For example, Physiotherapists can prescribe on successful completion of a non-medical prescribing course, whilst Operating Department Practitioners (ODP's) cannot, since current non-medical prescribing legislation does not included this group of health professionals (Health and Care Professions Council (HCPC) 2013).

Table 1.4: Non-Medical Practitioner, area of clinical practice, skills and regulatory body [Adapted from Abraham et al. 2016]

Role title	Area of practice	Clinical skills and responsibilities	Regulatory body
Advanced Clinical Practitioner (ACP) (NHSHEE 2015) Perioperative Specialist Practitioner (PSP) (DH 2007)	Medical, surgical wards emergency department, acute and primary care	Clinical assessment and physical examination Requests and performs investigations including radiology Assesses and evaluates patients postoperatively Recognises and initiates management of acutely ill patients Prescribes medications* Organises discharges Expedites care as appropriate	HCPC (AHP) NMC (Nurse)
Arthroplasty Practitioner (AP)	Ward, clinic	Clinical assessment and physical examination of patients following Arthroplasty surgery Requests and performs investigations including radiology Assesses and evaluates patients postoperatively Prescribes medications* Organises discharges	HCPC (AHP) NMC (Nurse)
Surgical Care Practitioner (SCP) (RCSEng 2014)	Surgical wards, perioperative, clinic, Acute and primary care	Undertakes surgical interventions Requests and performs investigations including radiology Assesses and evaluates patients postoperatively Recognises and initiates management of acutely ill patients Prescribes medications* Organises discharges Expedites care as appropriate	HCPC (AHP) NMC (Nurse)
Surgical First Assistant (SFA) (PCC 2012)	Intraoperatively	Assists in patient positioning Undertakes catheterisation Assists the surgeon during operations	HCPC (AHP) NMC (Nurse)
Physician Associate (PA) (RCoP 2012)	Medical, surgical, assessment units, emergency department, acute, community & primary care	Clinical assessment and physical examination Requests and performs investigations excluding radiology Assesses and evaluates patients postoperatively Recognises and initiates management of acutely ill patients Organises discharges Expedites care as appropriate Works under supervision	No statutory regulatory body MVR-RCoP
Physician Assistant in Anaesthesia (PA-A) (RCoA 2008)	Anaesthetics, intraoperatively, intensive care, HDU, Pre-operative assessment clinics, & emergency department	Undertakes local/regional anaesthetic blocks Organises anaesthesia checks for surgery. Administers and monitors your anaesthetic throughout your operation. Is indirectly supervised by consultant anaesthetist. Requests investigations excluding radiology	No statutory regulatory body MVR-RCoA

AHP-Allied Health Professional; HCPC-Health & Care Professions Council; NHSHEE-NHS Heath Education England; MVR-Managed Voluntary Register; NMC-Nursing and Midwifery Council; PCC-Perioperative Care Collaborative; RCoA-Royal College of Anaesthetists; RCoP-Royal College of Physicians
* Successful completion of Non-medical prescribing course, if their professional regulation allows

Non-Medical Practitioner (NMP) Titles

The fundamental ethos of role redesign was driven by policies (Table 1.2**,** page 5) which encouraged the development of various health professional roles, therefore a proliferation of NMP titles evolved, outlined in Table 1.4, page 8. Unprotected titles lead to confusion on job role; Moorthy et al. (2006) found less than 20% of patients correctly identified the SCP, whereas Cheang, Weller and Hollis (2009) found 48% correctly identified the SCP from other health professionals. Differences in practitioner titles are not just associated with new roles. A cross-sectional survey of International Nurse Practitioner/Advanced Practice Nursing (APN) network of the International Council of Nurses revealed 13 different titles for Nurse Practitioner (NP) and APN roles from 91 of 174 international nurses, from 32 countries (Pulcini et al. 2010). However, within this study several countries were only represented by one respondent and it is therefore likely that had further respondents been included, the number of titles revealed would have increased further. This study concurs with Duffield et al.'s (2009) systematic review which showed differences in title, role and scope of APN, which were more apparent in the UK. An overview of developing NMP roles internationally is included in Appendix 2.

It is crucial to accurately align job titles and job descriptions, with the role being performed as misalignment can result in disciplinary action. Quick, Hall and Jones (2015) provide a clear example of a Surgical First Assistant (SFA) who worked beyond outlined within the job description and the SFA role. Several issues were highlighted; the practitioner's title was a NP although duties were aligned to the role of SFA, furthermore additional duties aligned to the SCP role were being undertaken. This resulted in a disciplinary hearing by the employing organisation

which found the practitioner “guilty of gross professional misconduct” (2015:170). Changing titles within the NHS is common frequently occurring when organisations restructure (Buchanan and Bryman 2009) and can limit employment transferability (Imison, Castle-Clarke and Watson 2016).

Professional regulatory and governance requirements for Non-Medical Practitioner (NMP) roles

Professional regulation is regarded as a safety requirement to protect the public and maintain standards, requiring practitioners to adhere to a code of practice with regulatory robustness as re-enforced by the Francis Report (2013). It also provides a “community” for practitioners with common values and a sense of belonging (Professional Standards Authority (PSA) 2016). Restructuring professional’s scope of practice and regulation to remove barriers within healthcare is under current debate (Dower, Moore and Langelier 2015). The NMPs regulatory bodies are outlined in Table 1.4, page 8 whereby practitioners must adhere to their codes of practice. However, PA and PA-A roles in the UK currently have no regulatory body, despite being well accepted in America, (Carlisle 2015) and must register on a Managed Voluntary Register (MVR) with their respective Royal Colleges. The lack of professional regulation restricts their role in practice, being unable to request radiological investigations, prescribe and work unsupervised.

Currently no advanced register exists for nurses or AHPs, although presently the Royal College of Nursing (RCN) is piloting credentialing Advanced Practice (Pearce 2017; RCN 2017) discussed further in Appendix 3. Only Emergency Care Practitioners have established a national curriculum enabling credentialing of

Advanced Practitioners membership to the Royal College of Emergency Medicine (RCoEM 2015).

Clinical governance is a healthcare framework used to reduce risk (Scally and Donaldson 1998), using protocols, pathways and guidelines to achieve standardisation in clinical practice. Developing protocols and guidelines for NMP roles is crucial, to underpin safe practice and prevent disciplinary actions (Quick and Hall 2014a), and is the responsibility of the employer and practitioner (Dimond 2015). This also includes clinical supervision, mentorship, leadership, line management, job descriptions and job plans which provide clinical support and confidence to NMPs and teams (RCSEng 2016; Imison, Castle-Clarke and Watson 2016).

Evaluating the contribution of NMP roles

Given the economic challenges previously outlined NMP roles should demonstrate their contribution. Previously, specialist nurse roles have been used to reduce costs by NHS organisations (RCN 2010); hence Oliver and Leary (2012) demonstrated the value and contribution of the CNS role in England, by reviewing of a large database 'Pandora' of CNS events (n=3324) in England, using Health Resource Group 4 codes to cost CNS work concluding CNS in rheumatology represented income/savings £175,168, by enhancing patient outcomes using vigilance and rescue work. Audits and service evaluations are common and valid methods used to evaluate and monitor change in practice (Hall and Dearmun 2009). Several audits and service evaluations have illustrated NMP roles are safe and effective, which are shown in Table 1.5.

Table 1.5: Evaluation of Non-Medical Practitioner roles

Author	NMP Role	Outcome Measure	Evaluation Method
Newey et al. 2006	SCP	Reduced length of waiting times	Audit
Martin et al. 2007	SCP	Reduced length of surgical waiting list Improved operation times High patient satisfaction Low post-operative complication rates	Audit
Mallick et al. 2009	SCP	Reduced patient time off work Reduced post-op complication rates	Audit
Abraham 2011	SCP /PSP	Reduced length of stay Reduced readmission rates Low complication rates	Audit
Collett et al. 2012	PA	Improved case load Improved Trust income Reduced OPD waiting times Patient satisfaction Improved discharge rates Reduced readmission rates	Service evaluation
Kumar et al. 2013	SCP	Improved OPD capacity	Service evaluation
Tingle et al. 2016	SCP	Improved clinical activity	Service evaluation

Several studies have outlined the contribution offered by NMPs such as improved team working, continuity of patient care and service provision (RCSEng 2016; Gokani et al. 2016; Quick et al. 2013; Robles et al. 2011; Farmer et al. 2010). However, limitations to NMP roles have also been reported. An extensive evaluation of PA roles in Scotland indicated PAs were restricted in scope of practice due to regulatory restrictions (Farmer et al. 2011). Additionally, Kingsnorth's (2006) audit reported SCPs undertaking hernia repairs were not cost-effective compared to junior doctors, due to a longer learning curve and extended supervision.

The education and training for Non-Medical Practitioner (NMP)

Many NMPs are employed to support/replace junior medical staff therefore, the development of clinical skills is paramount (Quick 2010). Consequently,

educational curriculum frameworks have been developed for all roles except AP, (Table 1.6) providing a robust educational foundation to advance or extend clinical skills (RCSEng 2014; Royal College of Physicians (RCoP) 2012; RCoA 2008; DH 2007b; DH 2006a).

Table 1.6: Overview of NMPs clinical practice, skills and education framework

Role title	Curriculum framework
Arthroplasty Practitioner (AP)	None published
Advanced Clinical Practitioner (ACP)	NHSHEE 2014; NHSHEE 2015; HEYH 2015
Surgical Care Practitioner (SCP)	RCSEng 2014
Surgical First Assistant (SFA)	PCC 2012
Physician Associate (PA)	RCoP 2012
Physician Assistant in Anaesthesia (PA-A)	RCoA 2008
Perioperative Specialist Practitioner (PSP)	DH 2007b

The term ‘extended practice’ is used to describe health professionals who undertake clinical tasks after training, usually associated with another professional role (Council for Healthcare Regulatory Excellence (CHRE) 2010:2). The SFA (Quick and Hall 2014b) and AP role are considered an extended role. Whereas the term ‘Advance’ practice roles refers to those roles that require registered professionals to undertake additional training at Master’s level (RCN 2017). Being

> “Characterised by a high level of autonomy and complex decision-making, …the role is underpinned by clinical practice, management and leadership, education and research, with demonstration of core and area specific clinical competence” (National Health Service Health Education England (NHSHEE) 2017:1).

Advanced Practice frameworks incorporate clinical, education, research and leadership elements to the role (NHSHEE 2015; NHSHEE 2014; NHSWales 2010; National Executive Scotland (NES) 2010; Department of Health, Social Security and Public Safety (DHSSPS) 2014). Within the UK, Higher Education Institutions (HEI) deliver the majority of NMP courses except for the SFA. The ACP, SCP, PA, PA-A and PSP are considered to work at an advanced practice level (Appendix 1).

Currently no national educational strategy exists for NMP roles. Although, the Midlands (NHSHEE 2014; 2015) and Yorkshire and the Humber (Health Education Yorkshire and the Humber (HEYH) 2015) have developed regional strategies for the ACP role standardising, education and competencies, adding a consistent approach to maintaining safe, quality patient services (Kaur, Radford and Arblaster 2016).

Summary

This chapter has highlighted the context of UK healthcare in terms of its complexity and how workforce redesign influences provision of safe, quality care for patients, whilst remaining cost effective. National and European policies have been drawn on to highlight their impact on the variety of NMP roles. However, the array of NMP titles, lack of professional regulation to monitor these extended, advanced and new NMP roles remains a concern.

Such challenges and contextual evidence provided the backdrop to this study which aimed to explore Non-Medical Practitioner (NMP) roles within acute healthcare from an organisational and practitioner perspective. However, in order to set the scene a robust review of the literature was required being provided in Chapter 2.

Chapter 2 : Literature Review

This chapter reviews the literature that explores Non-Medical Practitioner (NMP) roles within acute UK healthcare to enable critical appraisal and synthesis of the retrieved literature. A systematic and detailed approach to searching is important to ensure all literature relevant to the research project is retrieved (Aveyard 2014:2). This provides an accurate, transparent and reproducible account (Fink 2010) whilst, ensuring objectivity and quality (Parahoo 2014:110) in relation to the proposed research. Literature reviews are undertaken for various reasons (Parahoo 2014:116); however, it was not within the aim of this study to undertake a systematic review but to apply a critical and systematic approach to reviewing the literature retrieved. The aims of the review are outlined in Figure 2.1, with the search focusing on retrieving and synthesising current literature.

Aims of the Literature Review

- Explore the development of NMP roles
- Identify previous research studies undertaken, whilst recognising gaps in knowledge thus helping to define further research themes.
- Critically appraise and synthesize the methodological quality and relevance of studies and their contribution to development of the intended research project.

Figure 2.1: Aims of literature review

Search Strategy

A detailed literature search is described in Appendix 4 including the research question, search terms, search engines and inclusion/exclusion criteria used. In summary, 131 articles were identified, after applying the search terms,

inclusion/exclusion criteria and search limits ten studies remained, shown in Figure 2.2.

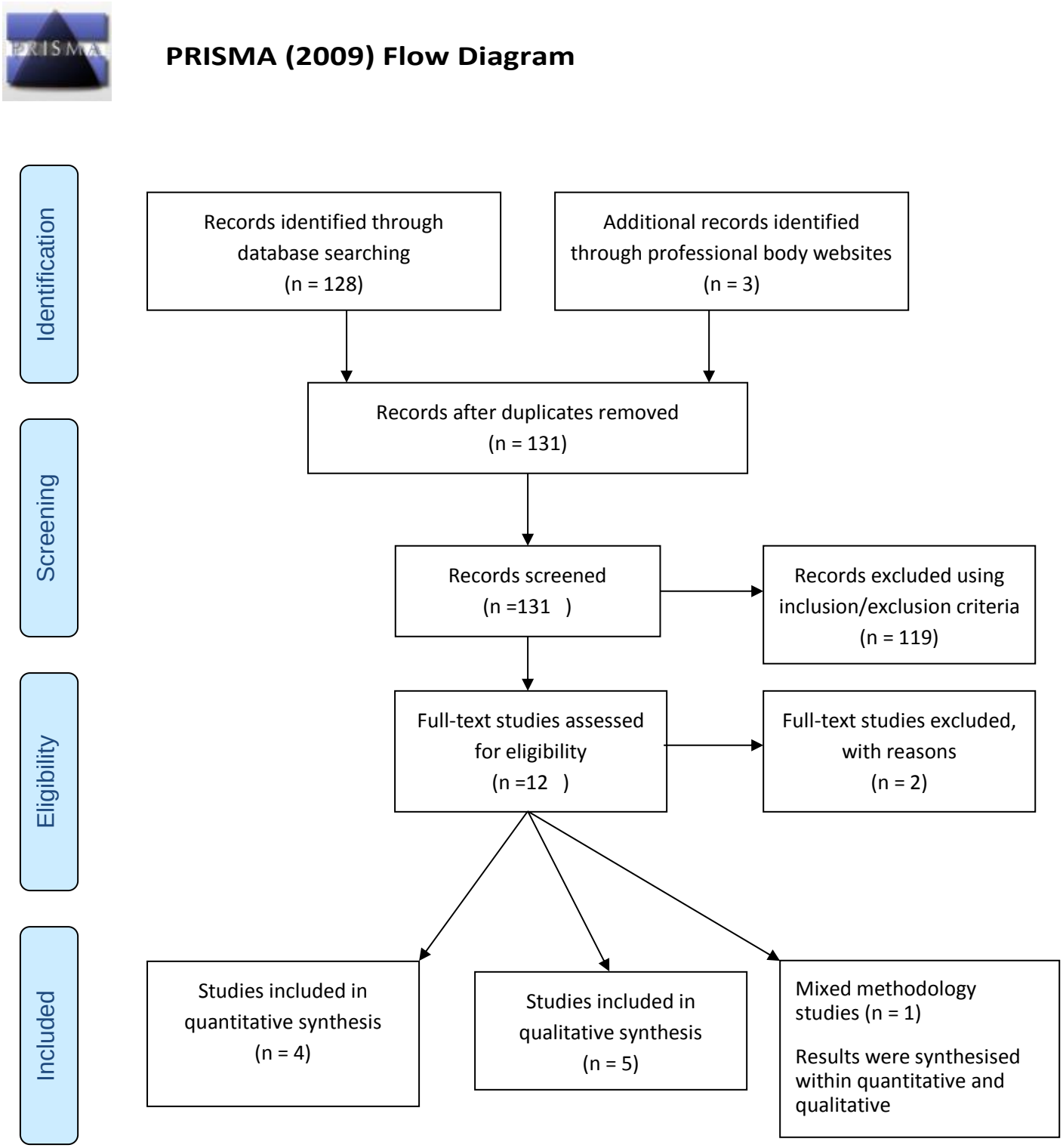


Figure 2.2: PRISMA flow diagram of retrieved studies

The ten studies selected were classified according to the NMP role (Table 2.1). These studies were also categorised according to methodology (Table 2.2) and each study was summarised in a data extraction table (Table 2.3; Table 2.4; Table 2.5).

Table 2.1: Studies classified according to Non-Medical Practitioner role

Non-Medical Practitioner studies retrieved (10)		
Surgical Care Practitioner (SCP)/Perioperative Specialist Practitioner (PSP)	**Physician Associate (PA)**	**Physician Assistant in Anaesthesia (PA-A)**
Cheang, Weller & Hollis 2009 Gokani et al. 2016* Kneebone et al. 2006a Quick 2013 Moorthy et al. 2006	Farmer et al. 2011 White & Round 2013 Williams & Ritsema 2014	Gray et al. 2010 Smith, Kane & Milne 2006
* SCP reported in an abstract of the same study (Peckham-Cooper et al. 2016)		

Table 2.2: Studies categorised by methodological approach

Studies retrieved for analysis (10)		
Qualitative Approach (5)	**Quantitative Approach (4)**	**Mixed Methodology (1)**
Farmer et al. 2011 Gray et al. 2010 Kneebone et al. 2006a Quick 2013 Smith, Kane & Milne 2006	Cheang Weller & Hollis 2009 Moorthy et al. 2006 Williams & Ritsema 2014 Gokani et al. 2016	White & Round 2013

Table 2.3: Data extraction sheet of qualitative research studies, adapted from Woodward and Webb (2001)

Author	Aim	Design	Study Population	Sample Size
Farmer et al. (2011) Scotland, UK	Evaluate the impact and contribution made by PAs to deliver effective healthcare in NHS Scotland	Mixed Methodology Qualitative data reported Longitudinal 2-years (checked with author)	PA (trained in America), patients involved with PA, medical supervisors, team members, senior managers and trade unions representatives working in primary, out of hours clinics, emergency medicine, intermediate and orthopaedics	15-PA 4 -Senior managers 3 -Trade unions reps 48-Team members 20-Patients
Gray et al. (2010) Scotland, UK	Evaluate PAA education in Scotland. Actual and perceived effects of implementation	Longitudinal 2-years	PAA , Clinical practitioners Clinical tutors in Scotland	25- PAA students 5- consultant anaesthetists 11- clinical tutors 25- theatre team members
Kneebone et al. (2006a) London, UK	Evaluating PSP training by investigating the context of the role and how differences in local circumstances affected development	Qualitative Longitudinal 2-year Grounded theory	Cohort of PSP/SCP university students and clinical staff in UK	Purpose sample 124-interviews (94 individual, 30 group) Sample size: 27 student PSP's 12 NHS Trusts
Quick (2013) Midlands, UK	To investigate additional benefits of the inclusion of a SCP to a surgical team	Qualitative Auto-Ethnography	All members of general surgical team at One NHS Trust in West Midlands who worked with researcher for at least 6 months	Purposive sample N=6 (medical consultants x5, associate spec x1)

Author	Aim	Design	Study Population	Sample Size
Smith, Kane & Milne (2006) England, UK	Investigate the barriers and enabler's of non-physician in anaesthetics (PA-A)	Qualitative	PAA, clinical teams at 4 hospitals in England	Sample n=23 interviews 4-Aneaesthetic nurse practitioner 5-Theatre nurses 9-Anaesthetists 3-Hospital case site visits 1-Case site telephone interview

Author	Data Collection	Summary of findings	Rigour	Hierarchy of Evidence
Farmer et al. (2011)	Interview's, feedback forms, Work activity data sheets	Good safety record (2 reported minor safety issues) Practice extended with time Hindrance-Limitation in scope of practice by UK legislation Unable to prescribe PA prepared to think and work outside protocols Good generalist, knowledge base qualification Valued, skilled, consistent and flexible team member Integration into clinical practice differed, dependent upon gaps in service/team Shared same medical culture Longer patient consultations Supervision time required-6.5 mins per month Patient satisfied Financial-grading implications	Previously piloted Granted ethical approval Funding NHS Education Scotland No quotes, table of findings nVivo analysis Except for consultation time- only qualitative data provided (clarified with author)	6
Gray et al. (2010)	Interviews x63, focus groups x3,	Resistance and acceptance differed between clinical teams	Ethical approval Quotes included improved trustworthiness	6

Author	Data Collection	Summary of findings	Rigour	Hierarchy of Evidence
	questionnaires (online survey x2)	Understanding of healthcare culture More difficult initial integration for non-healthcare PAA Integration improved with time Lack of understanding of PAA role, clarity of role Resistance from encroachment on existing roles Improved team working, sharing workload	Credibility provided-triangulation of data collection No questionnaire data provided- clarified with author ("questionnaire not used")	
Kneebone et al. (2006a)	Face-Face interviews individual and group (Audiotaped)	Lack of clinical support/mentoring/supervision Differences in role according to hospital size and working patterns Conflict over training opportunities between junior doctors and PSP Initial hostility for colleagues, required radial redesigned of work patterns and change Felt like "outsiders" neither nurse/ODP/physio Team working improved service provision Requires high level of clinical supervision Educational training : challenging, but supported role Lack of Inter-professional identity, clarity of role differed according to local hospital Student PSP's extremely commitment to role Issues with clinical governance, professional regulation and scope of practice Insecurity with future role prospects	No ethical approval required No interprofessional opinions/diaries/quotes Independent researcher reduced researcher bias Good retention rate (Dropout x1) Qualitative Data Analysis Appropriate (Categorising, comparing, developing concepts, assessing intentions, investigating data set patterns) Limitations discussed	6
Quick (2013)	Semi-structured interviews	Findings from health professionals and patient comments: Enhanced Team working- knowledge, competent, permanent member of the team,	Ethical Approval granted Medical staff being interviewed by researcher in role, potentially	6

Author	Data Collection	Summary of findings	Rigour	Hierarchy of Evidence
		safe operator, clinical decision making Sharing workload within the team to review patients Consistency within team Improved patient experience Supports surgical training Maintains service provision Aware of scope of practice and own limitations Works under indirect supervision	researcher bias but researcher acknowledges own limitation as emic researcher Small unit relatively few SCP's Including other health professional or management opinions would have added further rigour Narratives included	
Smith, Kane & Milne (2006)	Semi-structured interviews Case studies x4 hospital sites Written professional organisational position statements such as AfPP/RCoA/RCSEng x10	Perceptions of a non-physician anaesthetist role, require defined role boundaries, clarity of role, professional identify Practical competencies and academic level and ability to complete The working culture in operating theatre Resistance and acceptance dependent upon consultation, collaborative working, potential effects on existing staff Concerns with accountability, scope of practice and regulatory body Benefits seen in team working, communication and enhancing continuity of care Case Study- Difficulties completing academic modules Difficulties with acceptance from other health professionals Personal practitioner qualities to enthuse and "can do " attitude	Piloted interview questionnaire Sample unbalanced: Selected only 4 ODP's Error in number of case study sites, and participant numbers Quotes included Ethics obtained	6

Author	Data Collection	Summary of findings	Rigour	Hierarchy of Evidence
		Introduction depends upon the willingness (involvement) of many NHS staff/services to allow the role to successfully function and need to redesign services Career development opportunity to retain and recruit staff		

Table 2.4: Data extraction summary of quantitative studies

Author	Aim	Design	Study Population	Sample Size	Response Rate
Cheang, Weller & Hollis (2009) Midlands, UK	To find out whether patients are able to identify health professionals with medical qualification from the title Whether it is important to have all hospital visits/operations performed by a doctor Identify appropriate procedures crucial to be carried out by medically qualified person If patients would prefer to wait longer for operation by a medically qualified person	Cross-sectional survey	Patients attending ENT OPD clinics at 3 hospital sites Age13-83yrs (average 49yrs) F-60%	Convenience sample N=220 total completed N=15 Excluded as incomplete N=190 included	Not reported
Moorthy et al (2006) England, UK	Assess the patients perspective and knowledge of which members of the surgical team were medically qualified	Cross-sectional survey	Patient attending ENT OPD at 2 hospital sites Age 18-80yrs F-53%, M-40%	Convenience sample N=374 Unknown sex 7%	Not reported
Williams & Ritsema (2014)	Perceived benefits and challenges of the role of PA from doctors and patients perspective and	Descriptive Survey	Physician Assistant supervisors in UK Worked with PA role range 2months-8 years, (average 2years)	Purposive sample N=61 PA supervisors Represented 14	40.7%

Author	Aim	Design	Study Population	Sample Size	Response Rate
England, UK	the impact of the PA professions being under voluntary rather than statutory regulation			speciality settings	
Gokani et al. (2016) England, UK	Aimed to explore current exposure and trainee attitudes and experiences towards Non-Medical workforce	Descriptive Survey	Surgical trainee delegates at a conference 2015 (Varied sample from medical students to surgical registrar level trainees)	Convenience sample 112 completed returned	20%

Author	Data Collection	Summary of Results	Rigour	Hierarchy of Evidence
Cheang, Weller & Hollis (2009)	Quantitative Survey/questionnaire	Patients are confusion with health professional job titles, incorrectly identifying a number of non-medical roles such as consultant nurse, SCP 41% patients thought they should see a medically qualified person every time they visited hospital 83% patients thought Anaesthetic practitioner was a doctor 51% patients thought Consultant nurse was a doctor 48% thought SCP was a doctor 94%* Patient want to be informed if non-medical practitioner is to perform operation 92*% thought operations should be performed by doctors *p=0.001 significant	No Ethics approval discussed Inaccurate account of data returns N=190 analysed (n=220, 15 incomplete reported) Age range including 13-year old children may allow of inaccurate participant bias e.g. parental/guardian completion Descriptive Statistics presented, Z-test No data presented to substantiate significance No power analysis Null hypothesis not stated at outset	6
Moorthy et al (2006)	Quantitative Survey/questionnaire	82% patients incorrectly identified SCP as medically qualified Patients over 80-years were less likely to identify SCP Females less likely to correctly identify SCP	No ethics approval discussed No pilot testing discussed Limited findings provided	6

Author	Data Collection	Summary of Results	Rigour	Hierarchy of Evidence
Williams & Ritsema (2014**)**	Self-reported semi-structured Questionnaire	Findings from PA supervisors (doctors) 30% employed in General Practice 18% Emergency Medicine 14.8% Trauma & Orthopaedics 50%> indicated PA have good clinical and communication skills, provide continuity of care, consistency to team, flexibility to team, additional skill mix, promotes team working 48% improved patient experience Limitation/difficulties with having PA role 82% inability to prescribe 42% inability to request radiology investigations 42% lack of understanding of role by other staff 26% requires supervision 19% requires more support than other staff 60.6% Positive patient feedback 12% noted patients had difficulty distinguishing PA from doctor >90% Dr recognise importance of statutory regulation PA need to be able to prescribe, request radiology and have clarity on supervision requirements	No Ethics Approval discussed Questionnaire Pre-tested Good response rate Distribution of questionnaire may have affected return rates PA asked to distribute survey and told it wasn't an evaluation of themselves as individuals but feedback would suggest individuals rather than roles were sometimes being reflected e.g. variability in quality of PA No patients included in the survey. Study would have benefited from perception from PA themselves. Additional limitations to study noted	6
Gokani et al. (2016)	Quantitative descriptive survey	Findings of surgical trainee 52% of respondents had worked with Non-Medical Workers (NMW) 49% had worked with NMPs in teaching hospitals No NMWs were known to work in paediatrics or neurosurgery 24% worked in Operating department performing	No ethics discussed No total number of delegates at the conference provided, although 20% response rate given	6

Author	Data Collection	Summary of Results	Rigour	Hierarchy of Evidence
		supervised surgery 17% independently performed surgical procedures 21% NMWs were independent prescribers 72% of trainees agreed that NMW improved service delivery 58% agreed NMWs improved patient care 65% trainees felt NMW took away trainees training opportunities 74% trainees felt NMWs supported trainees on the ward 59% NMWs supported trainees in clinic 48% NMWs worked in the operating theatre 47% NMWs worked in acute admissions 46% felt NMWs could enhance surgical training 47% would be happy for NMWs to look after their relative 46% suggested there should be more NMWs 54% reported they would like to work with NMW as consultants	Figure missing re names of NMPs Emailed author no response Data-collection questionnaire not described Questionnaire pretesting not discussed Some inaccuracies in discussion regarding regulation and professional body of NMPs and educational curriculum frameworks	

Table 2.5: Data extraction sheet summarising mixed methodology study

Author	Aim	Design	Study Population	Sample Size	Response Rate
White & Round (2013) London, UK	To Study the progress of introduction of PA role in Paediatric Intensive Care Unit	Mixed Methodology	PA and staff (doctors and nurses) working in Paediatric Intensive Care Unit	19 – PICU staff (doctors x7, Band 6+ x8, band 5 x4) PA-3	19/50 9/50

Author	Data Collection	Summary of results	Rigour	Hierarchy of Evidence
White & Round (2013)	Survey questionnaire x3 Semi-structured Interview at 5-months (health professionals)	Initial tension, confusion of exact role, with unrealistic expectations from staff in PA ability to undertake certain clinical skills outside their training programs Role required supervision Competition for training opportunities Lack of understanding and clarity of role and boundaries Initially PA were of little clinical use PA and staff expectations differed with time, some were more positive than others PA questionnaire on clinical activities had shown an improvement in direct patient care activities Improved team working, sharing workload and valued Improved continuity and patient care Career progression for nurses Limited by scope of practice and regulation Concerns over clinical governance	Ethical approval: reported as not required Limited data provided re responses to questionnaire Some quote included	6

Methodological review of the qualitative studies

Five qualitative studies (Smith, Kane & Milne 2006; Gray et al. 2010; Farmer et al. 2011; Kneebone et al. 2006a; Quick 2013) summarised in Table 2.3, page 18 and qualitative aspects of White and Round (2013) mixed methodology design were appraised within this section. According to Guba and Lincoln (1989) the trustworthiness of qualitative research is established using four criteria; credibility, transferability, dependability and confirmability. As previously discussed (Appendix 4) the Kennelly (2011) framework (page XVII) was used to critically appraise the retrieved studies; notable aspects of this appraisal will be further discussed. All studies explored different aspects of NMP roles from health professionals and patients, requiring ethical approval, thus complying with UK legislation (National Research Ethics Service (NRES) 2011). Three studies (Gray et al. 2010; Farmer et al. 2011; Kneebone et al. 2006a) investigated NMP roles from a student NMP's perspective. Whilst Quick (2013), Farmer et al. (2011) and White and Round (2013) examined a variety of healthcare professionals perceptions of qualified NMPs. Only Farmer et al. (2011) directly interviewed patients to ascertain satisfaction with PA role.

The trustworthiness of qualitative research can be affected by sample selection (Parahoo 2014); samples are chosen purposively to collect the data relevant to the research aim. All studies adopted purposive sampling and sample sizes were congruent with qualitative research, albeit sample sizes varied widely, ranging from six (Quick 2013) to 124 interviews (Kneebone et al. 2006a). Quick (2013) investigated the benefits of SCPs within the surgical team but appears to lack diversity by only selecting senior doctors (n=1 associate specialist and n=5

consultants) with no inclusion of junior or middle grade doctors. She offers no rationale for choosing her selection criteria “requiring 6-months working with SCPs”; therefore excluding junior doctors (Foundation Year (FY) 1/2) who rotate every three months. Including junior and mid-level doctors would have been beneficial, since SCPs frequently work at this level within the team (RCSEng 2014). Whilst not including junior and mid-level doctors is considered a limitation of the study, it was not the main focus within the study, but arguably could be an interesting future study. Additionally, if the wider surgical team included nursing, AHP and patient interviews this would undoubtedly have improved the transferability of the findings.

Similarly, Kneebone et al. (2006a) study included n=124 interviews (94 individual and 30 group interviews) which included PSPs and professional colleagues and is a strength of this study. The authors did not clarify the background of these professional colleagues; indeed the responses of clinical supervisors may be different to clinical colleagues.

White and Round (2013) in their mixed methodology study, undertook semi-structured interviews after a 5-month placement with doctors and nurses, which were considered appropriate participants. However, this study would have benefited from discussing the selection criteria of the participants including length of time they had worked with the PA, which may have influenced the findings. Additionally, there was no discussion as to the time-frame chosen (5-months) to evaluate the PA role and why the interviews were not undertaken at the 10-month review, which could have yielded further insight into the PA’s development. The timing of these interviews is important, since several studies suggest preceptorship is required for successful transition post-qualification, to develop confidence and competence and can take 6-

12 months (DH 2009; Hobbs and Green 2003; Beecroft et al. 2001; Charnley 1999). Therefore, the 5-month interview schedule in White and Round (2013) study may have limited the findings to a less positive response as PA would still be developing competence in clinical practice.

A variety of data collection methods were used, being appropriate for qualitative studies, thus adding trustworthiness and rigour to a study (Maltby et al. 2010:304). All studies used interviews; three utilised semi-structured interviews (Quick 2013; Smith, Kane and Milne 2006; White and Round 2013) allowing large amounts of in-depth data to be collected which could be clarified immediately, thus reducing misinterpretation (Parahoo 2014). However, the opportunity for interviewer/researcher bias exists from the researcher potentially influencing participant responses, which can affect the study's credibility (Tod 2010:355). Several studies employed strategies to reduce this risk. Two studies (Kneebone et al. 2006a; Farmer et al. 2011) employed independent interviewers thus reducing researcher bias, adding further credibility and trustworthiness to the studies. In comparison, White and Round (2013) and Smith, Kane and Milne (2006) did not discuss independence, although it is presumed that Smith, Kane and Milne (2006) were independent researchers since the study was funded by NHS service Delivery and Organisation Research and Development Programme. Additionally in all the qualitative studies, it is unclear if a second researcher or the participants verified the transcripts to test the rigour of the data and its analysis, which is considered a limitation. Reflexivity, is the continuous reflection of the researcher (Parahoo 2014:413) which can reduce researcher bias; no study offers reflexivity, although Quick (2013) acknowledges her limitations as an emic researcher.

The inclusion of verbatim quotations within studies provides depth and trustworthiness, whilst communicating study findings (Moule and Goodman 2014). Three studies (Quick 2013; White and Round 2013; Gray et al 2010) included quotes supporting their findings. Whilst Kneebone et al. (2006a) and Farmer et al. (2011) included a table of summary findings but no quotations although Kneebone acknowledges this omission was due to word limitations, which may also apply to Farmer et al. (2011), albeit inclusion would have added further rigour to both studies.

All studies incorporated additional data collection methods offering methods-based triangulation of data, enhancing trustworthiness and rigour (Maltby et al. 2010:304). As well as undertaking semi-structured interviews Smith, Kane and Milne (2006) included case study sites including organisation's position statements, whereas Gray et al. (2010) incorporated undertook focus groups. Farmer et al. 2010 used feedback and work activity sheets, while Quick (2013) included her own auto-ethnographic narratives and patient correspondence, thus offering credibility to her findings, although to provide a more balanced data patient complaints could have also been included.

Overall, the qualitative studies were considered to be high quality, with only a few methodological weaknesses, thus providing trustworthy and credible findings in examining NMP roles and transferability. Only Farmer et al. (2011) involved patients when researching the NMP role. The majority of studies were mainly educationally focused, undertaken within two years of commencing the NMP role. No study incorporated employing healthcare organisational information on the development and integration of NMP role.

Methodological review of the quantitative studies

Four quantitative studies (Moorthy et al. 2006; Cheang, Weller and Hollis 2009; Williams and Ritsema 2014; Gokani et al. 2016) summarised in Table 2.4, page 23) plus White and Round (2013) mixed methodology quantitative aspects (Table 2.5, page 27) were critically appraised using Duffy's (1985) quantitative critical appraisal tool (Table 6.8, page XIX). Following the Williams and Ritsema (2014) and Cheang, Weller and Hollis (2009) were considered superior studies, albeit Cheang, Weller and Hollis (2009) study had methodological weaknesses and data errors.

Four studies chose a cross-sectional survey design to investigate their aim. Cross-sectional designs collect snap shot information such as feelings, attitudes and behaviours to describe a phenomenon of interest, with the ability to observe associations but without the ability to establish cause and effect (Moule, Aveyard and Goodman 2016). Only White and Round (2013) undertook a longitudinal approach using a survey as part of a mixed methodology design evaluating PA integration into the team over a 10-month period. A longitudinal approach provides the ability to follow-up participants at frequent time intervals, therefore responses to the same questions can be measured. Longitudinal studies can be useful in studying new interventions, such as NMPs including attitudes and behaviours, however, low responses rates mean that results are subject to bias. However, this study only included survey questionnaires of PAs at 10-months rather than including the other health professionals as per 5-month schedule; no rationale was provided to justify this decision. Interestingly, only White and Round (2013) discussed ethical approval, although it was not required for their study; it is considered good practice to

acknowledge ethics, thus indicating consideration in protecting respondents (Moule and Goodman 2014), especially in studies including children. Yet surprisingly Cheang, Weller and Hollis (2009) included children within their study and did not discuss ethics, which considered a weakness. However, ethics may have been omitted from publication due to journal word limitations.

For results to be generalisable the sample population should reflect the wider population (Parahoo 2014), three studies used convenience sampling and one chose purposive sampling of consultants or doctors working with PA roles. Two studies (Cheang, Weller, Hollis 2009 and Moorthy, et al. 2006) sampled ENT patients investigating their understanding of health professional roles, which included SCPs. Whilst Cheang, Weller and Hollis (2009) sample included respondents aged 13-83 years, which is consistent with ENT related health (Porth 2007). Arguably, results may have been affected by issues pertaining to parents/guardians consenting for their children (before the age of consent) or if the participants had a limited capacity to consent to the research. Additionally, neither study provided justification for selecting ENT patients, which would have proved valuable, as few SCPs currently work in this speciality. Furthermore, the potential for sample bias was noted in Williams and Ritsema (2014) descriptive survey, which investigated doctors responding on behalf of patients, rather than involving patients within the research, which would have strengthened the reliability of the results. Gokani et al. (2016) selected delegates at a surgical trainee conference, these delegates ranged from medical students to senior qualified trainee surgeons. Therefore, this sample offered a wide variety of opinions and was considered a strength of this study, especially as NMPs are likely to work closely with trainee surgeons and medical students.

Within quantitative designs where statistical analysis is required to answer a hypothesis, an adequate sample size is important to represent the population and reduce sample errors (Bryman 2016). From the studies reviewed sample size varied widely. Cheang, Weller and Hollis (2009) reported n=190/220, although inaccuracies in data management were noted. Whilst, Moorthy et al. (2006) and Gokani et al. (2016) reported returns n=374 and n=112 respectively, they neglected to report the sample size, therefore data verification was not possible. No study undertook power analysis to determine their sample size and therefore the results are open to type l and type ll errors (Bowling 2014), potentially reducing the accuracy of the results and generalisability of the findings. Appropriate statistical tests were applied by Cheang, Weller and Hollis (2009) and Moorthy et al. 2006) to test their study's hypothesis.

Low response rate can impact results due to response bias as a result of non-responses, but can be difficult to estimate in base-line surveys (Bowling 2014). Study response rates varied widely; Cheang, Weller and Hollis (2009) reported 83%, whilst Moorthy et al. (2006) did not report their response rate. Therefore, results from Moorthy et al. (2006) study should be viewed with caution. Whilst, White and Round (2013) mixed methodology also reported a poor response rate; n=19/56 responded before PA introduction, compared to n=9/50 two-weeks after PA introduction. The authors attributed the low response rate to tension within the unit during this phase, and therefore might reflect participant bias; this research would have benefited from a questionnaire twelve-months post-introduction, to evaluate the development of PAs within the team. Gokani et al. (2016) study investigated the opinions of surgical trainees at a conference, reporting a 20% response rate, although no total delegate figures were given to confirm this response rate. Their sample contained a wide

range of healthcare experience from medical students to trainee registrars; exact numbers were not reported for these respondents. Given the wide range of respondents experience this sample may also be subject to sample imbalance and bias.

All studies used a questionnaire as a data collection tool, being considered appropriate for quantitative designs. Floyd and Fowler (2001) propose questionnaires are designed to answer the research question. No study reported using a validated questionnaire, although Williams and Ritsema (2014) reported pre-testing their questionnaire with PA employers, thus demonstrating additional reliability to their data collection tool, although information no how pre-testing was undertaken would have been valuable. Gokani et al. (2016) study neglected to report the number of questions or all the results making replication impossible. Only Cheang, Weller and Hollis (2009) provided sufficient data for replication.

Overall, Williams and Ritsema (2014) study investigating PAs was considered the most robust. Methodological weaknesses existed within all the quantitative studies appraised, ranging from a lack of ethical approval, sample selection and size, questionnaire validity and replicability. No quantitative study investigated NMP roles from an organisational or patient perspective. One study, White and Round (2013) investigated the NMP role from the practitioner which occurred early in their new role.

In summary, the methodological review of the ten studies critically appraised highlighted a number of positive issues but also weaknesses. Qualitative studies demonstrated credible findings, although some sample diversity was noted; overall

the findings were considered transferable to similar settings. Conversely, quantitative studies highlighted more methodological weaknesses, although Williams and Ritsema (2014) was considered superior, replicability would be difficult. Therefore, results overall were not considered generalisable beyond the study's population. The mixed methodology study, White and Round (2013) omitted discussing pre-testing the questionnaire, provided insufficient data collection information and suffered poor response rates thus making replicability difficult. Overall, no study examined NMP roles from an organisational and only one from a patient perspective. These studies appear to focus on four NMP roles; PSP, SCP, PA and PA-A, no study examined the existence of other roles. All studies were published in quality peer reviewed journals; six were linked to Medical Royal Colleges, three were nursing based and two were healthcare journals.

Results of literature review

Aveyard (2010) recommends an in-depth analysis and synthesis of the results and findings from the literature to establish emerging themes to investigate the research question posed (Figure 2.3).

"***What factors influence the development of Non-Medical Practitioners roles within Acute Healthcare in the United Kingdom?"***

Figure 2.3: Research question

The emerging themes for each study are illustrated in Table 6.6, page XV. Four main themes were identified; service delivery, understanding and expectations of the NMP role, clinical governance and education.

Service delivery

Six studies (Smith, Kane and Milne 2006; Kneebone et al. 2006a; Farmer et al. 2011; White and Round 2013; Quick 2013; Gokani et al. 2016) reported the development of NMP roles was driven by changes to healthcare such as the introduction of European Working Time Directives (EWTD).

One study undertook a cost comparison to measure the financial impact of developing a NMP role. Farmer et al. (2011) invited participants to indicate which role was most interchangeable with a PA; if a practice nurse replaced a PA this would save £15,000, however if replaced by a doctor it would cost £43,000 more.

Several studies identified that respondents perceived NMPs positive contributions to service delivery. Four qualitative studies (Quick 2013; Kneebone et al. 2006a; Smith, Kane and Milne 2006; Farmer et al. 2011) perceived that NMP roles improved service provision. Only Farmer et al. (2011) investigated patient outcomes (safety), finding two errors in patient documentation and prescribing which was beyond the PA's scope of practice. White and Round (2013) indicated NMPs positively contributed to the continuity of patient care, attributing this to the attendance at ward rounds and team meetings. Similarly, Williams and Ritsema (2014) descriptive survey reported 63% of respondents considered PAs improved continuity of care. Similarly, Gokani et al. (2016) descriptive survey reported 72% surgical trainee thought NMPs improved service delivery and 58% improved patient care.

Furthermore, Williams and Ritsema (2014), Quick (2013) and Farmer et al. (2011) studies identified that patients were satisfied with NMPs. However, only

Farmer et al. (2011) interviewed patients. Whilst Williams and Ritsema (2014) survey reported medical supervisors' perception of patient experiences as positive, Quick's (2013) auto-ethnographic study only included positive patient responses, omitting complaints.

NMPs worked in a wide variety of clinical settings (Table 2.6); two studies (Farmer et al. 2011; Williams and Ritsema 2014) reported similar numbers of PAs working in primary care at 25% and 30% respectively. No other studies quantified where NMPs worked or examined NMPs clinical working in detail.

Table 2.6: Variety of clinical settings where Non-Medical Practitioners work

Clinical setting	NMP role	Study
Primary Care- Walk-in-centres Acute Care- Medicine Trauma & Orthopaedics Geriatric Medline Medical Assessment Unit Neurosurgery Cardiology Otolaryngology (ENT)*	Physician Associate (PA)	Williams & Ritsema 2014 Farmer et al. 2011
Paediatric Intensive Care	Physician Associate (PA)	White & Round 2013
Acute-Anaesthetics	Physician Assistant in Anaesthesia (PA-A)	Gray et al. 2010 Smith, Kane & Milne 2006
Acute-Surgery	Surgical Care Practitioner (SCP) Perioperative Specialist Practitioner (PSP)	Quick 2013 Kneebone et al. 2006a Gokani et al. 2016
Otolaryngology	Surgical Care Practitioner (SCP)	Moorthy et al. 2006 Cheang, Weller & Hollis 2009

***ENT-Ear, Nose & Throat

From an organisational perspective, retention of health professionals is a concern. Three studies (White and Round 2013; Farmer et al. 2011; Smith, Kane,

Milne 2006) emphasised developing NMP roles provided career progression within clinical practice, thus improving recruitment and retention in healthcare.

Understanding and expectations of NMP roles

Health professionals understanding of the NMP role

Two studies (Farmer et al. 2011; Smith, Kane and Milne 2006) revealed team members were provided with information on the introduction of NMP role prior to their induction. Only Smith, Kane and Milne (2006) case study discusses the difficulties experienced in trying to engage with professionals unwilling to accept PA-A roles. Williams and Ritsema (2014) found 42% health professionals working with PAs in GP practices lacked an understanding of the role, even a few (3%) GPs had unclear expectations of PAs. Six studies (Williams and Ritsema 2014; White and Round 2013; Gray et al. 2010; Farmer et al. 2011; Kneebone et al. 2006a; Smith, Kane and Milne 2006) suggested this lack of understanding of NMPs scope of practice affected integration and team working. Consequently, NMPs were requested to perform duties beyond their scope of practice such as drug administration (White and Round 2013). Additionally, several studies (Gray et al. 2010; Farmer et al. 2011; Kneebone et al. 2006a; Smith, Kane and Milne 2006) reported hostility arising from a perceived threat of NMPs encroaching on existing health professional roles. White and Round (2013) survey highlighted concerns over competition for training opportunities; conversely Quick (2013) and Farmer et al. (2011) suggested NMPs supported training. The longitudinal studies (Gray et al. 2010; White and Round 2013) perceived initial resistance which gradually improved with time.

Patient understanding of NMP role

Several studies highlighted a lack of patient understanding of NMP roles. Interestingly, only Quick (2013) indicated that patients were aware she had a nursing background. Two studies (Moorthy et al. 2006; Cheang, Weller and Hollis 2009) focused on patients correctly identifying SCPs as NMPs. Moorthy et al. (2006) cross-sectional survey of ENT patients reported 82% thought SCPs were medically qualified, compared to Cheang, Weller and Hollis (2009) study which reported 48% patients assumed SCPs were doctors. However, this study also revealed other roles were incorrectly identified, such as anaesthetic practitioner (83%) and consultant nurse (51%). These findings concur with Williams and Ritsema (2014) who found 12% of patients were unable to distinguish PAs from doctors. No studies identified how patients were informed of NMPs.

In summary, health professionals and patients have a limited understanding of NMP roles. No study indicated how patients are informed of NMP roles. Two studies acknowledged trying to involve health professionals prior NMPs commencing roles to improve acceptance and reduce hostility.

Clinical Governance

Regulation of Non-Medical Practitioners

Clinical governance is considered important for maintaining quality and safety within healthcare (Scally and Donaldson 1998) when developing new roles, being reinforced by the Francis Report (2013). Regulation and legislation concerns were mainly associated with PA and PA-A roles which currently lack a regulatory body to underpin safe practice including the inability to prescribed and request radiology investigations (Smith, Kane and Milne 2006; White and Round 2013; Williams and

Ritsema 2014). Over 90% of doctors considered regulation important for PA roles (Williams and Ritsema 2014). This finding concurs with four studies (Williams and Ritsema 2014; Farmer et al. 2011; Kneebone et al. 2006a; Smith, Kane and Milne 2006) which indicated restrictions in UK legislation as hindering NMP role development. However, Farmer et al. (2011) reported PAs were willing to work outside protocols considering this a preferable attribute to other roles, implying protocols can restrict practice. A similar view was held by Smith, Kane and Milne (2006) who reported difficulties in developing "rigid" protocols for the anaesthetised patient whose physiological parameters can change.

Recognising practitioner's own scope of practice and limitations was discussed in studies who explored new and developing roles. Four studies (Kneebone et al. 2006a; Smith, Kane, Milne 2006; Farmer et al. 2011; White and Round 2013) perceived NMPs scope of practice extended with time. However, awareness of own limitations does not diminish with time, since Quick's (2013) auto-ethnography findings of an experienced SCP acknowledged an awareness of her own limitations. An awareness NMP's individual limitations was considered important, since health professionals working with PA roles showed a poor understanding of their role and scope of practice (Williams and Ritsema 2014; White and Round 2013).

Supervision of Non-Medical Practitioners

Seven studies (Gokani et al. 2016; Williams and Ritsema 2014; White and Round 2013; Quick 2013; Farmer et al. 2011; Smith, Kane and Milne 2006; Kneebone et al. 2006a) identified supervision as a requirement for NMP roles. However, the degree of supervision varied widely between roles, being potentially

dependent upon the practitioner's experience. Quick (2013) an experienced SCP, worked under distant supervision being sufficiently skilled to complete a hernia operation with a nurse undertaking the SFA role. In contrast, Williams and Ritsema (2014) study of doctors (PA supervisors) who had worked with PAs for 2 months-8 years; a quarter of these doctors perceived PAs required supervision. Whilst White and Round (2013) prospective survey of a PAs in a paediatric intensive-care unit indicated close supervision was required at 5-months, but after 10-months supervision was reduced for complex skills such as central line insertion. Furthermore, Farmer et al. (2011) reported many doctors felt PAs required too much supervision, yet reported a medication error from a PA not consulting their supervisor. Additionally, Gokani et al. (2016) reported 24% SCP operated with supervision, whilst 16% worked independently.

Understanding the level of clinical supervision required is fundamental. Several studies reflected uncertainty with the level of supervision. Smith, Kane and Milne (2006) case studies revealed indirect supervision occurring in clinical practice, though Kneebone et al. (2006a) reported high level supervision was needed, albeit these PSPs were undertaking their training. Williams and Ritsema (2014) found 18.8% of doctors required clarity regarding supervision requirements. The level of required supervision appeared to impact services. Smith, Kane and Milne (2006) indicated supervision would require coordination and planning of operating lists to anaesthetic skill mix, thus involving different departments. Whilst Farmer et al's. (2011) study reported difficulties with supervision in larger or busy departments. Three studies (Smith, Kane and Milne 2006; Farmer et al. 2011; Williams and Ristema 2014) clearly identified the clinical supervisor as the Consultant or GP.

In summary, it is perceived that regulation and legislation restrict PA and PA-A roles this could influence the decision to develop and recruit to these roles. The need for protocols seems to vary; some studies suggest protocols restrict NMP roles. Doctors undertake clinical supervision for NMP roles, although confusion exists on the level of supervision required and its effect on service delivery. No studies discussed if their clinical supervisor was also their line manager and if there was a clear governance structure.

Education

Developing competence

Several studies discussed the development of skills, knowledge, education and training. Three studies (Kneebone et al. 2006a; Smith, Kane and Milne 2006; Moorthy et al. 2006) were undertaken before the first educational curriculum frameworks were published in 2006. Only Gray et al. (2010) clarified the academic level for PA role; postgraduate diploma. Two studies suggested that participants found the training “challenging” (Kneebone et al. 2006a; Smith, Kane and Milne 2006). Several challenges arose within training; Gray et al. (2010) reported PA-As entering as science graduates found the first year “overwhelming” particularly in clinical practice. In contrast, PA-As with a clinical background struggled with the academic level (Smith, Kane and Milne 2006). Difficulties with transition after qualifying were also noted; Williams and Ritsema (2014) reported doctors also found PA abilities varied. The two longitudinal studies reported differing timescales to gain clinical competence; White and Round (2013) found it took approximately 10-months post-qualification, whilst Gray et al. (2010) who found no discernible difference after one year in training. Thus variation in PA abilities may be a result of individual

learning which may change post-qualification, when gaining confidence as a new professional.

All, but two studies (Cheang, Weller and Hollis 2009; Moorthy et al. 2006), discussed the need for additional qualifications and clinical training for NMP roles. Only White and Round (2013) and Farmer et al. (2011) indicated academic training of the PA role; this potentially reflected a lack of academic curriculum framework for NMP roles during these studies. No study reported NMP previous experience, type and level of education or their involvement outside the clinical environment.

Overall conclusion of the literature review

In summary, the NMP role development is under researched. From the ten studies identified, three (Kneebone et al. 2006a; Smith, Kane and Milne 2006; Moorthy et al. 2006) were undertaken early in NMP role development before the first NMP educational curriculum frameworks were published. Therefore, their findings focused on establishing standardised training and gaining professional acknowledgement. From critically synthesising these studies four main issues were identified in the development of NMP roles (Figure 2.4).

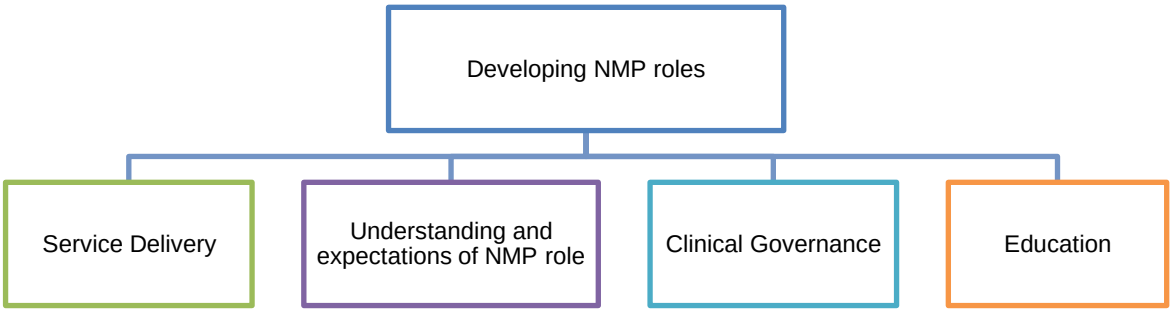


Figure 2.4: Main issues identified from the studies in relation to the objectives of the research project

Given the paucity of quality UK literature exploring NMP roles and the extensive gaps which have been identified (Figure 2.5), it is clear further high quality

research is needed. The next chapter will outline the research aim and objectives, and discuss in detail the methodology and methods of this study.

Gaps in knowledge in exploring Non-Medical Practitioner (NMP) roles

- No study investigated the development of NMP roles from an organisational perspective
- Few studies explored the drivers leading to the development of NMP roles
- Only one study identified the educational level of PA role required for recruitment
- One study discussed education of NMPs after recruitment.
- No studies have examined the experience required for undertaking NMP roles
- No study has formally evaluated the NMP role
- Only one study investigated PA role from a patient perspective
- No study examined in detail NMP clinical activity
- No study investigated why practitioners undertook these NMP roles
- No study ascertained how patients were being informed of NMPs involved in their care

Figure 2.5: Gaps in knowledge regarding Non-Medical Practitioner roles in UK

Chapter 3 : Research Design and methodology

Introduction

This chapter will discuss the methodological approach and critically appraise data collection methods, whilst providing a rationale for choice. As highlighted in Chapter 2 there is a paucity of quality empirical research examining NMP roles, hence the rationale for this study's aim and objectives (Figure 3.1). This chapter will outline the methods undertaken to explore NMP roles from an organisational and NMP perspective within the UK.

Study aim:

To explore the development and integration of Non-Medical Practitioner (NMP) roles within current acute healthcare settings in the UK, from an organisational and NMP perspective

Objectives:

1. Identify the NMP roles in practice and the regional distribution of these roles
2. Identify the factors influencing the development and recruitment of NMPs
3. Determine how NMP roles have been integrated into acute healthcare.
4. Identify clinical governance requirements required for the NMP role
5. Identify NMP's contribution to healthcare workforce
6. Identify the educational requirements of the NMP role

Figure 3.1: Aim and objectives for this research study

Researcher Ontology and Epistemology

An appraisal of the researcher's ontology and epistemological beliefs is provided in Appendix 5.

Methodology

The aim of this study was to explore NMP roles within the UK from healthcare organisational and NMPs perspective thus requiring two studies. No previous study provided a national picture of NMP roles, and no definitive methodological approach

was established following the critical review of the literature. When little evidence exists debate surrounds which methodological approach is best. Green and Thorogood (2009) propose exploratory studies utilising qualitative approaches whilst Gray (2014:238) recommends quantitative approaches to explore a wide variety of views, experiences and opinions. Therefore, several types of research approaches were considered; Table 3.1 briefly outlines those considered to explore NMP roles and justification for suitability.

To meet the study's aim and objectives one and two a descriptive, cross-sectional survey design was chosen with the purpose of providing the ability to capture respondents over a large geographical area, establish a national picture of the NMP workforce within acute healthcare; and creating a foundation for further research, whilst being congruent with the researcher's beliefs. The limitations of the study design are outlined later.

Table 3.1: Type of research approaches considered for this study

Types of research approaches		Justification for choice
Case study	Usually yield more qualitative data from observing a selected sample such as NMP roles, but can also include quantitative results frequently used in mixed method studies (Moule, Aveyard & Goodman 2017:248)	Case studies were considered as they are good at collecting qualitative and quantitative data. This type of approach would have worked well for NMP roles. However, it was not chosen as the initial research approach, since the objective was to identify NMP roles in UK practice. This would be a good approach to investigate individual NMP roles in the future.
Observational study **1.Structured** **2.Unstructured**	Often used in mixed method studies, can be intrusive 1. **Structured** uses checklists and scales to measure and statistical	An observational study could be used to gather qualitative and quantitative data on specific NMP roles. However, specific NMP roles would have had to be identified first. Method maybe subject to observer bias and

Types of research approaches		Justification for choice
	analysis, thus supporting quantitative designs 2. **Unstructured** openly records observed behaviours according to research question providing qualitative data (Moule, Aveyard & Goodman 2017:320-326)	may require inter-observer comparison to add rigour. This approach could be utilised to explore NMP roles in the future, and the research was supported by a team of researchers.
Survey: Descriptive	Is non-experimental approach which has the ability to collect large amounts of data such as opinions, attitudes, expectations, and behaviours across a wide geographical location (Parahoo 2014:167) **Descriptive surveys** tend to be utilised when little is known and are therefore useful in examining NMP roles. Descriptive surveys also offer the ability to identify trends and links (Ellis 2016:103). Survey research designs can collect data either over time (longitudinal) or at a single point (cross-sectional) (Maltby et al. 2014:39).	A descriptive survey was chosen since it had the ability to gather information regarding multiple NMP roles over a large geographical area. Additionally a survey approach can use open and closed questions thus providing both quantitative and qualitative data, which allowed information to be clarified by respondents. It could also be administrated online to improve accuracy, whilst allowing respondent flexibility in completion. Since the research aimed to develop a national picture, therefore a cross-sectional rather than longitudinal survey was undertaken

Population and sampling

Defining the study population and sample required for the study was essential (Parahoo 2014:259), to ensure a representative population sample (Moule and Goodman 2014). To meet the study's aim both healthcare organisations and NMPs perspectives were collected via two separate studies outlined in Figure 3.2 (Study A and Study B). Both Study A and Study B were designed to answer each of the

research objectives identified earlier in figure 3.1 and are outlined in detail later when discussing the questionnaire construction, page 53.

Study A: Examined the employment and role of the Non-Medical Practitioner in acute healthcare organisations within England, from an organisational perspective

Study B: Investigated Non-Medical Practitioners' views in the UK.

Figure 3.2: Two studies used to explore Non-Medical Practitioner roles

In Study A, a purposive sampling approach of all acute healthcare organisations in England (n=156) was chosen using NHS Choices (2016). Private and independent hospital names were also retrieved from the internet (n=90). Organisations in Scotland, Wales and Northern Ireland were excluded due to differences in devolved healthcare (Morris, Carrell and McDonald 2016).

In Study B, convenience and snowball sampling approaches were used to contact NMPs in the UK. The term Non-Medical Practitioner includes many qualified nurse and AHP roles (RCSEng 2016), Table 3.2 illustrates those NMPs included and excluded in this study, as previously discussed in Chapter 1.

Table 3.2: Non-Medical Practitioner roles titles included and excluded for this study

NMP titles included	NMP titles excluded
Advanced Clinical Practitioner (ACP)	Advanced Nurse Practitioners(ANP)
Arthroplasty Practitioner (AP)	Clinical Nurse Specialists (CNS)
Perioperative Specialist Practitioner (PSP)	Emergency Care/Nurse Practitioners
Physician Assistant in Anaesthesia (PA-A)	Endoscopists
Physician Associate (PA)	Modern Matron (MM)
Surgical Care Practitioner (SCP)	NMPs practising internationally
Surgical First Assistant (SFA)	
Surgical Practitioner (SP)	
Other titles such as Surgical Nurse/ Practitioner	
Laparoscopic Nurse/Practitioner	

Sampling frames reduce sample bias by ensuring a representative population (Parahoo 2014:292). Currently no Advanced Practitioner or NMP registers exists, therefore the actual number of NMPs within the UK is unknown, although Figure 3.3 provides an estimate. Therefore, since no accurate method could identify NMPs random sampling techniques could not be used. Consequently, convenience and snowballing approaches were used to identify suitable NMPs, despite the potential of sample imbalance and bias (Parahoo 2014).

Advanced Clinical Practitioner (AP) - unknown
Arthroplasty Practitioner -Unknown
Perioperative Specialist Practitioner (PSP) - 50 (Kneebone et al. 2006a & 2006b)
Physician Assistant in Anaesthesia (PA-A) -71 (Association of Physician Assistant Anaesthesia 2016)
Physician Associate (PA) -238 (Faculty of Physician Associates 2016)
Surgical Care Practitioner (SCP) - 170 (Auld 2015)
Surgical First Assistant (SFA) – unknown
Estimated total NMP=529 +

Figure 3.3: Estimation of Non-Medical Practitioner roles in UK

Method of data collection

Questionnaires can collect attitudes, beliefs and experiences on a large scale (Bowling 2014). Two individual semi-structured questionnaires were developed to collect descriptive data; Study A was completed by healthcare organisations and Study B by NMPs. Both questionnaires were similar, albeit the NMP questionnaire (Study B) collected more information to meet research objective three, “integration”, which included clinical practice and team working. This is more fully outlined under questionnaire construction. This was purposively done so responses could be cross-referenced to assist in triangulating the results, thus adding reliability to the data collected. The questionnaires included open and closed questions/additional comment sections. Open comments were included encouraging respondents to

further explain responses, therefore enhancing the researcher's understanding of the results (McKenna, Hasson and Keeney 2010:221). Additionally open questions gathered respondent's opinions, thus providing a qualitative aspect and depth to the data. A "self-completion" approach was used given the wide geographical population; Table 3.3 outlines its advantages and disadvantages. Several types of questionnaires were critically analysed; postal, telephone and electronic and a rationale is provided for the method chosen and is discussed later in this chapter.

Table 3.3: Advantages and disadvantages of self-completion questionnaires [adapted from McKenna, Hasson & Keeney 2010:221]

Self-completed questionnaires	
Advantages	**Disadvantages**
No direct researcher influence	No researcher available to clarify questions
Cost effective	Poorer response rates
Less time constraints, can plan time to complete	Slow method of data collection
Online-ease of answering and progress can be viewed	Need access to electronic Information Technology and ability to use IT
Ability to stop and start	Unable to verify responder
Anonymity	Limited ability to further expand on information provided
More complete and accurate data entry	Reliant upon respondent's motivation and ability to complete returns, literacy skills, understanding of the questions, accessibility, anonymity and propensity to provide truthful answers (Bryman 2016).

Electronic web-based

An electronic web-based questionnaire was chosen, since both studies required information from a wide geographical population (England). Several advantages and disadvantages are been outlined in Table 3.4.

Web questionnaire response rates vary widely; therefore Denscombe (2014) recommends response rates are judged against similar studies; however no previous

studies exist for surveying multiple NMP roles. To improve response rates several strategies were undertaken (Table 3.5). Additionally, Field et al's (2002) systematic review reported financial incentives improved response rates of physicians; this was not considered viable for a small project with minimal budget.

Table 3.4: Advantages and disadvantages of electronic web-based questionnaires

Advantages	Disadvantages
Popular (Dillman, Smyth, Christian 2014)	Reliant on responders motivation to complete (Bryman 2016)
Cost effective, Quicker Easy & flexibility to complete Anonymous (Bryman 2016)	Difficulties can arise with understanding questions (Bryman 2016) Response rates 13-85% (Dykema et al. 2013)
Information Technology (IT) already exists and is growing within healthcare (NHS England 2014, Wachter 2016) and within 89% homes (Office of National Statistics 2016)	Reliant on responders IT resources and knowledge
Facility to highlighted non-completed questions	
Facility to indicate progress and re-route from not applicable questions (Rea and Parker 2014)	
Facility to interrupt questionnaire and restart at same point on multiple occasions	
Facility to include invitation letter with email contact if additional assistance was required	

Table 3.5: Strategies to improve questionnaire completion

Strategy	Rationale
Incomplete questions were highlighted	Improve completion rate and number of useable response
Re-routing responder away from not applicable questions	Encourage respondents to participate, answering question applicable to them
Allowing responder to access the questionnaire at multiple times	Allow respondents time to allocate and return to survey when convenient maximising opportunity for complete returns
In Study A –Two reminders sent to the healthcare organisations	Improve number of responses

Both Study A and B questionnaires were administered via “Bristol Online Survey” (BOS). BOS was chosen since it is designed for academic research, compliant with UK data protection and security legislation and is supported by Coventry University. Determining email authenticity can improve returns (Dillman, Smyth, & Christian 2014). Therefore, a NHSmail account was used to provide security and authenticity to distribute the BOS Uniform Resource Locator (URL) to the sample.

Postal and Telephone

Postal and telephone data collection methods were considered but dismissed due to the nature and size of the survey. A fuller rationale for this decision is included in Appendix 6.

Questionnaire construction

Using a standard questionnaire which has previously demonstrated reliability and validity is preferable (Jones and Rattray 2010:370) and would allow comparative analysis of findings between studies. Designing questionnaires can be complex, lengthy and subject to errors (Jones and Rattray 2010:373). However, since no questionnaire currently existed to collect data about NMP roles a questionnaire was purposively designed. Other survey questionnaires which explored the introduction of new healthcare roles such as Associate Practitioner (Spilsbury et al. 2009) provided a good example of collecting data however the questionnaire was not detailed enough to reflect the objectives of this study. Miller, Cox and Williams (2009) mixed methodology study examined the impact and productivity of Advanced Practitioner roles within the UK. Miller, Cox and Williams (2009) study population

was similar and provided additional themes to be incorporated into the questionnaires such as information on job descriptions, person specifications and shift patterns. However, as Miller, Cox and Williams (2009) also reported a low response rate (n=13/168) this raised concerns as to the detail of information which could be obtained from organisations. In an effort to assist organisations in completing the questionnaire in Study A, the introduction included sections and identified professionals who could potentially provide the information.

The questionnaires were developed specifically to explore NMP roles. The content of this study's questionnaires was derived from the literature reviewed (Table 6.6, page XV) whilst reflecting the research study aim and objectives. As recommended by Rea and Parker (2014) the questionnaire content was derived by expert NMPs, researchers and curriculum frameworks (Table 3.6) to reduce potential researcher bias (Maltby et al. 2010:101). Additionally Griffin and Melby (2006) and Wickham (2013) studies which investigated APs and CNSs respectively, had high response rates. In recognition of this, the authors were contacted and kindly provided their questionnaires, which assisted in influencing the structure of the final questionnaire.

Table 3.6: Sources used to construct the questionnaire

Content	Source
Detail of NMP role including skills, responsibilities and educational parameters	Curriculum frameworks: SCP (RCSEng 2014) PSP (DH 2007b) SFA (PCC 2010) PA (RCoP 2009) PA-A (RCoA 2008)
Number and structure of questions High response rate- distribution contact noted	Wickham (2013) Spilsbury et al. (2009)
Question design and negative/positive structure	Griffin and Melby (2006)
Design of organisational questions in evaluating regarding new roles Difficulties obtaining information from organisations were noted and consideration given in distribution	Miller, Cox and Williams (2009)

As previously mentioned two different, but similar self-completion semi-structured questionnaires were developed (Study A and Study B). The full questionnaire from Study A's, (organisation) is included in Appendix 7 and Study B's, (NMP) is shown in Appendix 8.According to Rea and Parker (2014) questionnaires must be structured to systematically obtain the information required to meet the aim and objectives. Therefore both questionnaires were divided into sections reflecting the study's objectives including sections such as the development, recruitment, integration, clinical and clinical governance, education of NMP roles. However, Study B's (NMP's) questionnaire was longer and included additional sections relating to role integration and contribution to gather more detailed information from the NMP and their opinions. Firstly, an explanation of how these questions reflect this study's objectives is provided. The individual questions used within Study A and Study B are also presented in Table 3.7, page 59, alongside this research study's objectives.

This study's first objective was to identify the NMP roles in practice and the regional distribution of these roles. Questions within this objective were chosen to obtain information on the healthcare organisations, including regional location and size, in beds, to provide context from the respondents. Questions investigated the development, existence and type of NMP roles. To gain an understanding of the NMP workforce being explored the NMPs questionnaire (Study B) requested information on how long they had worked as NMP, type of contract, shift patterns, speciality, employer, region and clinical experience before employment as a NMP.

The second objective in this study was to identify the factors influencing the development and recruitment of NMPs. Questions were included to ascertain how the NMP roles developed such as what drivers influenced the development of the role and when and where NMP roles were introduced. Whilst some evidence exists on the potential drivers for new roles, questions were included in both questionnaires to assist in understanding the rationale and sustainability for developing the NMP role. Additionally, to determine equitability in recruiting NMPs, organisations were asked several questions including the professional practitioner status, educational level, specialist qualifications and clinical experience required.

Successful development and integration of new roles is reliant upon supportive management, good leadership and organisational commitment. Therefore a question was included to ascertain who led the development and if it was accompanied by a business plan. To understand the variety of practitioners being appointed, several questions were incorporated to investigate the organisations recruitment criteria and the professional background of NMPs who undertook these roles. Organisations were required to identify under which workforce team NMP roles

were incorporated, since this may influence their development and integration. To explore the future importance and longevity of NMP roles within organisations, both questionnaires included a question asking if respondents thought their NMP roles would be replaced to if it became vacant. Open questions were also included to explore perceived constraints/challenges and facilitating/enabling factors which affected the introduction of the NMP role.

The third objective was to determine how NMP roles have been integrated into acute healthcare. Various questions were asked to understand where NMP roles were being employed in clinical practice, including clinical specialities and settings. To gain information on how the workforce was being utilised, details regarding shift patterns was sought. To appreciate the wider aspect of the NMP role, questions were asked regarding NMPs additional clinical responsibility such as participating in research, audit, writing protocols and guidelines, responding to complaints and staff management. Additionally questions were included to understand how NMPs perceived their role was being understood and accepted by other health professionals and patients, and not least how NMPs communicated their role. This was considered important as understanding NMP roles offers confidence and assurance to both the public and health professionals, factors which can affect integration and sustainability.

The fourth objective was to identify clinical governance requirements required for the NMP role. Information was requested which underpinned governance and supported patient safety such as clinical supervision, job description, leadership, protocols/guidelines and professional regulation. This information was included to

examine if the implementation of NMP roles had been planned in accordance with existing frameworks and policy thus ensuring patient safety.

The fifth objective of this study was to identify NMP's contribution to healthcare workforce; several questions were included to ascertain how NMP roles were perceived to contribute to various aspects within healthcare as well as clinical activities undertaken. However, information was also requested to appreciate the wider aspect of NMPs contribution in terms of team working, communication, and support of other health professionals. Additionally, questions were also included to understand if and how NMP roles were evaluated, of particular importance when considering the current NHS financial burdens.

The final objective was to identify the educational requirements of the NMP role. This was considered an important question, since education underpins the knowledge and skills required to deliver safe care. Therefore, collecting information on the provision, funding and level of education offered as well as the NMPs providing teaching commitments was included.

To provide a fuller understanding of respondents' answers, open-ended questions were included at the end of each section within both surveys, thus providing qualitative data; although completion was optional. Organisations were offered the option to provide additional information on the NMP role including the benefits and challenges/limitations.

Table 3.7: Construction of Study A and Study B Questionnaires reflecting this research study's aim and objectives

	Questionnaire construction	
Study's: objectives	Study A –Examined the employment and role of the Non-Medical Practitioner in acute healthcare organisations within England from an organisational perspective	Study B- Investigated Non-Medical Practitioners' views in the UK.
Demographics & 1. Identify the NMP roles in practice & the regional distribution of these roles	1. What is the name of your Trust? 2. Which best describes your hospital's location in England? 3. Based on inpatient beds; how large is your hospital?* 4. Does your hospital currently employ Non-Medical Practitioner roles such as Surgical Care Practitioner (SCP), Perioperative Specialist Practitioner (PSP), or Physician Assistant/Associate roles within your hospital? • If No, is the hospital considering recruiting Non-Medical Practitioners in the future? • If Yes, please indicate which category of Non-Medical Practitioner you have e considering employing within your hospital/organisation? 5. *Please include any additional comments on the organisational or workforce data related to the	1. Are you currently employed as a NMP? route 1.2 Have you previously been employed as NMP? route 1.3 What is the title of your Non-Medical Practitioner role? • Surgical Care Practitioner (SCP) • Perioperative Specialist Practitioner (PSP) • Surgical First Assistant (SFA) • Physician Assistant/Associate (PA) • Physician Assistant in Anaesthesia (PA-A) • Other –please specify 2. Which year did you commence working as a NMP? 3. How many years have you worked as a NMP? 4. What is your gender? 5. What is your working contract? (Please tick ALL options that apply) 6. What type of working shift pattern do you undertake as a Non-Medical Practitioner? 7. Which term best describes the type of organisation which

	NMP role, such as full time, part-time roles	employs you? 8. What is the geographical region of your employing organisation in England? 9. What is the name of your employer? 10. How many years of clinical experience did you have as a registered professional prior to being employed as a NMP? 11. What type of clinical environment did you work in prior to undertaking NMP role? (Please tick ALL that (apply) 12. Which clinical speciality do you work within?
2. Identify the factors influencing the development and recruitment of NMPs	1. What were the main factors which initiated the development of the Non-Medical Practitioner roles within your hospital/organisation? • Response to service need • Redesign of service • Reduction of junior doctors from the deanery • Development of new service • Extension of team skill mix • Reduction of workforce costs • Reduction of waiting lists • Improve service delivery • Reduce A&E waiting targets • Promote interprofessional working • Developing career pathways	1. In your opinion what were the main organisational drivers to the development of the NMP role? (Please tick no more than 3) • Developing a career pathway • Development of new service • Extension of team skill mix • Following Government initiatives such as National Practitioner Programme • Improve service delivery • Introduction of European Working Time Directive • Promote inter-professional working • Redesign of service • Reduce A&E waiting targets • Reduction of junior doctors from the deanery

	• Following Government initiatives such as National Practitioner Programme • Introduction of European Working Time Directive • Not Known • Other – please specify 2. Which individual/s led / are leading the development of the Non-Medical Practitioner role? 3. Was/is the introduction of the non-medical practitioner role supported by a business plan? 4. How was/is the Non-Medical Practitioner role communicated to staff within your organisation? 5. *Please include any additional comments on the development of NMP role? 6. What grade are the Non-Medical Practitioners employed on? 7. In recruiting NMPs, please indicate the minimum educational qualification required when recruiting to non-medical roles? 8. Please indicate if any specialist qualification was required when recruiting non-medical roles? 9. Please indicate the minimum level of healthcare experience required during the recruitment	• Reduction of waiting lists • Reduction of workforce costs • Response to service need • Other – please specify 2. How many years has your NMP role been in existence within your organisation? 3. What is your professional background? 4. Who is your registering professional body? 5. What Agenda for Change grade is your NMP role employed at? 6. Why did you consider applying for this NMP role? 7. Do you think the organisation will replace your NMP role if you leave the position? 8. *What do you perceive are the current constraints/challenges to your NMP role? 9. *What would you consider are the main factors facilitating/enabling the introduction of the NMP role within your organisation/service?

	process of a Non-Medical Practitioner, in years? 10. Why did you consider applying for this NMP role? 11. How likely is your organisation to recruit Non-Medical Practitioner roles in the future? 12. *Additional comments on recruitment of Non-Medical Practitioner role. Please include additional NMP roles you may consider/ have recruited, including any specific qualification, experience required. 13. *Please include any additional comments on the development of NMP role (Optional)	
3. Determine how NMP roles have been integrated into acute healthcare.	1. Under which workforce structure are/will the Non-Medical roles be incorporated? 2. Who is the Non-Medical Practitioner's line manager?	1. How frequently do you work in these clinical areas? Clinical Area? • OPD/GP clinic- new appointments • OPD/GP clinic- follow-up appointments • Operating department • Ward • Emergency Department/A&E • Pre-operative (anaesthetic) assessment Clinic • Teaching/educational seminars (outside clinical area) • Multidisciplinary Team meetings • ITU/HDU • Acute/Emergency medical/surgical assessment clinic

		2. How would you currently rate your perception of NMP role in terms of the following statements…? [Disagree/Strongly Disagree/Undecided/ Agree/Agree strongly] • I feel my NMP role is respected/valued by other health professionals • My job has a clear structure for career progression • The size of my workload requires regular unpaid overtime • My job is demanding dealing with difficult situations • My work is motivating and challenging • My senior colleagues make all the clinical decisions within the team • Initially health professionals displayed hostility towards my role • I have sufficient skills and knowledge to undertake the role • I am given shared duties and responsibilities within the clinical team 3. *Please provide additional comments regarding whether you perform any duties outlined under direct supervision? 4. In your opinion how informed do you feel other people are regarding the NMP role within your organisation? [No Information or awareness/ Limited information or awareness /Don't know /Some information or awareness/Fully informed or

		fully aware] • Medical Consultants • Staff Grade/SpR • Junior doctors • Allied Health Professionals • Advanced Nurse Practitioners/Specialist Nurses • Senior Nurses • Junior Nurses • Healthcare support workers • Allied Health Professionals • Genera/practice Managers • Educators • Reception staff/secretaries • Medical Students • Nursing students • ODP/AHP students 5. How informed do you feel your NMP role is generally perceived within the organisation? 6. How are patients informed about your NMP role? 7. When describing your NMP role to patients, what terms do you use? 8. To what degree do you feel patients understand the NMP role?

		9. Has your NMP role changed since you commenced the role, in terms of acceptability, clinical duties, responsibilities, speciality or other? *If yes, in what way do you think the role has changed?
4. Identify clinical governance requirements required for the NMP role	1. Please select the clinical governance frameworks which your organisation has/is developing specifically for the non-medical practitioner roles? (Please tick all that apply) • Job description • Job Person Specification • Procedures/policies/protocols/guidelines • Competency package • Clinical supervision/mentoring • Other – please specify 2. Who undertakes/will undertake the clinical supervision of the non-medical practitioner? 3. Did your organisation undertake a risk assessment prior to the Non-Medical Practitioner commencing? 4. *Please include any additional comments on the introduction and clinical governance of NMP role	1. Who is your clinical supervisor/mentor? (Tick only one option) 2. What is the professional status of your line manager? (Tick only one option) 3. Please rate these clinical governance statements regarding your NMP role? [Disagree Strongly/Disagree/Undecided/Agree/Agree strongly] • My job description clearly and accurately defines my role • My grade is aligned to my role and job description according to Agenda for Change • There are relevant organisational policies/procedures/protocols/guidelines for my NMP role • There is a clear organisational structure for NMP role • There was no clear clinical supervision/mentorship on commencing the role • My job plan is varied • I attend an annual Personal Development Review • I am not aware of a risk assessment prior to commencement of NMP role

5. Identify NMP's contribution to healthcare workforce	1. Has/is your organisation evaluated/evaluating the non-medical practitioner role? 2. If Yes, please identify if the non-medical practitioner was evaluated against any of the following criteria? (Please tick all that apply) • Discharge rates • Improved ordering of investigations • Improved team working • Junior doctor training • Length of A&E waiting times • Length of clinic waiting lists • Length of operating waiting list • Length of stay • Readmission rates • Not aware of any evaluation • Other – please specify any other methods of evaluating the NMP role 3. How would you rate the value of the non-medical practitioner role, using the following statements "The NMP role…..? Please choose only one option per statement [Strongly disagree Disagree Uncertain Agree Strongly agree]	1. How would you rate the perceived contribution of Non-Medical Practitioner role with the following statements "The NMP role…..? Disagree/Strongly Disagree/ Uncertain Agree/Agree strongly • Improves the patient experience by providing continuity in care • Provides additional skills to the team • Provides a consistent member to the team • Requires constant clinical supervision • Caused conflict with other health professionals • Improves service provision/delivery • Fills a deficit thus maintaining safe staffing levels • Interferes with medical staff training and development • Provides expert and knowledgeable • Lacks clinical decision making responsibilities • Improves prompt requesting of investigations • Improves prompt interpretation of investigations • Supports/compliments junior doctor training 2.* Please additional any comments regarding clinical working in this section? 3. As a Non-Medical Practitioner, how often do you…. ? • Undertake/participate in research/audit • Undertake direct staff management

	• Provides continuity to patient care • Provides additional skills to the team • Provides consistent member to the team • Supports other nursing and allied health care professionals • Increases the efficiency of the service • Maintains safe staffing levels • Has caused conflict with other health professionals • Negatively impacts junior doctor training • Provides a knowledgeable practitioner • Improves prompt ordering of investigations • Provides effective clinical decision making • Requires constant clinical supervision • Scope is limited by protocols and procedures or regulations 4. *Please provide any additional comments regarding the benefits of the NMP role 5. *Please provide any additional comments regarding the challenges/limitations of the NMP role.	• Deal with complaints, clinical incidents/adverse events • Write protocols/guidelines
6. Identify the educational	1. Are all non-medical practitioners employed within your organisation provided the opportunity to	1. What is your highest academic qualification? (Tick only one option)

requirements of the NMP role	undertake a nationally recognised educational programme?(Please tick only one option) 2. Is there an educational budget within your organisation to fund non-medical practitioner (NMP) training? (Please tick only one option) 3. In your organisation's opinion is university based education important for these roles? 4. **Which educational courses are most commonly funded for the NMP roles? 5. *Please use this space to provide any additional comments on the education of the Non-Medical Practitioner role	2. Have you completed a nationally recognised educational non-medical practitioner programme? (Tick only one option) 3. Which nationally recognised specialist qualification have you completed? 4. Where did you undertake your recognised qualification? 5. As a NMP please rate the following statements regarding your education and development, in your opinion …..? [Disagree Strongly/Disagree/Unsure/Agree/Agree Strongly] • I already had the experience, skills and qualifications before commencing the NMP role • From the outset I was provided with the education and training required to undertake the NMP role • I do not consider there is a need to attain education and training for this NMP role • The opportunity to attain the skills required to undertake the NMP role was limited/difficult • I had adequate clinical support/supervision to develop your skills 6. As a NMP please rate the following statements regarding your role as an educator, in your opinion….? [Disagree Strongly/Disagree/Unsure/Agree/ Agree Strongly] • I participate in education and training of nursing staff • I participle in education and training of junior medical staff

		• I contribute to the education and professional development of healthcare students • I teach formal sessions at the university • I undertake patient education/information sessions • I disseminate at conferences/educational events
	*Please provide additional comments regarding the NMP roles, which has not been included?	
	*Open questions-optional **Closed questions- optional	

The questionnaire construction included ordinal and frequency data with a variety of scaled measurements such as Likert scale and scaled frequency. A Likert scale can measure beliefs, opinions and attitudes from ordinal level data and is fairly quick and easy to use, although this can lead to respondent boredom (Bowling 2014). The questionnaire length was determined by the relevant data required (Denscombe 2014:171). The questionnaire for Study A (healthcare organisations) is provided in Appendix 7 and Study B (NMPs) provided in Appendix 8. Multi-item responses reduce measurement error due to misinterpretation (Jones and Rattray 2010:374); Brace (2013) recommends they are viewed on one page, reducing the need for respondents to scroll down. Survey research can be subject to reactivity; when respondents complete the survey using patterns such as continually using the "acceptable" answer (Abbott and Sapsford 2002:104). Consequently, a few questions were rephrased incorporating both negatively and positively worded questions; albeit this technique is not universally recognised (Jones and Rattray 2010:373).

Validity

Validity refers to the questionnaire's ability to accurately measure what it is supposed to measure (Rebar et al. 2011:163). Jones and Rattray (2010:373) recommend reviewing the literature and involving potential respondents to ensure face and content validity. To further improve face validity, public involvement was sought. Health Research England (DH 2005) and National Institute of Health and Research actively encourage patients and public involvement in research projects. The Research Support Volunteer Programme (RSVP) (Figure 3.4) at Coventry University commented on the readability of the questions and overall thoughts of the

proposed study. RSVP feedback was valuable, as the group reported an interest in the proposed study. It also highlighted a lack of understanding of the term “Non-Medical Practitioner” and the role, although when explained it was clearer. Consequently, additional information was provided to clarify the term at the outset of the study in the information provided to organisations and NMPs.

Research Support Volunteer Programme (RSVP)

This research group is not specifically a patient group, but are people interested in research and since most members of the UK public will have accessed healthcare some may have prior knowledge of Non-Medical Practitioner roles, being more commonly seen in General Practice; therefore RSVP involvement was considered valid.

Figure 3.4: Research Support Volunteer Programme (RSVP)

Reliability: Pilot-testing the questionnaire

Abbott and Sapsford (2002:107) recommend piloting during the planning stage to reduce ambiguous questions or completion errors, thus adding reliability to the research findings (Moule and Goodman 2014:377). A small pilot-test was performed by reviewers who represented the study’s sample as recommended by Brace (2013:195). As experts, questions were assessed for relevance to the study objectives, clarity, to avoid misinterpretation and ability to complete, therefore assessing reliability and content validity including accessibility, structure and sequencing. The reviewers and feedback following the pilot-testing are shown in Table 3.8, amendments were made and the same individuals were given the opportunity to re-test, measuring the questionnaire’s “stability” (Moule, Aveyard, Goodman 2017). Although, Cronin, Coughlan and Smith (2015:122) suggest using statistical analysis to ensure consistency and reliability of the questionnaire, only two

reviewers completed the re-test; the other reviewers reported a re-test was not required. Therefore, test-re-test statistical analysis was not performed.

Table 3.8: Reviewers and feedback from pilot-testing questionnaires

Study A: Healthcare Organisations	Study B: Non-Medical Practitioners views perceptions
Reviewers	
1-Assistant Director of Nursing; 1-Deputy Director of Nursing	4 NMPs (1-retired, 1-lecturer; 1- SCP; 1-PA-A) Different specialities and different organisations
Feedback from piloting	
Sequencing error in hospital bed size	Answerability and length of some questions
Inclusion of Advanced Clinical Practitioner	Repetition of one question
Inclusion of "Not Known" answers when information was not available	Spelling and grammatical errors
Potential misunderstanding of term NMP, NMP in clinical practice can be interpreted as Non-Medical Prescriber	Issues with electronic completion parameters

Distribution

Study A (organisation) was a purposive sample, therefore all (n=156) Acute Healthcare organisations were identified using NHS choices as discussed earlier. For successful distribution of the questionnaire a contact person/department within the organisations was required. Splisbury et al. (2009) undertook a national survey of Assistant Practitioners in England which resulted in a good response rate (85%) using Directors of Nursing in Acute Hospitals as the key contact. Consequently, it was decided to distribute the Study A questionnaire to Acute NHS hospitals via all Directors of Nursing/Chief Nurses. However, n=90 Independent/Private healthcare organisations were contacted via the Chief Executive, as difficulties arose finding

Nursing Directors within many of these organisations. Contact was made using their email address where available or the organisation's communication department email using the researchers NHSmail.net account the questionnaire link was provided in the correspondence. Recognising that several professionals within organisations may be delegated the task of collecting this information, a PDF questionnaire for printing was offered. As previously discussed a guide to assist with the completion of the sections within the questionnaire was included on the first page of the questionnaire suggesting professionals who may more readily be able to provide the information.

Professional organisations related to the NMP roles (Table 3.9) were contacted during the developmental stages of the survey. Study B's (NMP) questionnaire was distributed/advertise to members of the professional organisations that approved. However, the Faculty of Physician Associates declined to distribute the survey considering the PA role was aligned to medicine and not an advanced or extended role. The author was unaware of the Arthroplasty Practitioner (AP) role at the outset of the study; therefore their professional organisation Arthroplasty Care Practitioner Association (ACPA) was not contacted to distribute this survey. Additionally, as Study B was using a snowballing approach, emails and flyers were circulated via colleagues and Managed Voluntary Registers for PA and PA-As. Flyers were also distributed at one healthcare conference. The URL link was also added to Twitter

The distribution and data collection for the organisational questionnaire (Study A) occurred from 6th June-31st August 2016, however this was extended to 30th September 2016 for NMP questionnaire (Study B) to account for summer holidays

and the commencement of Higher Educational Institutions. To improve response rates, two reminders approximately 4 weeks apart, were sent to organisations in Study A, via email which included the survey URL to ease completion, as recommended by Dillman, Smyth and Christian (2014). However, this was not possible in Study B. The questionnaire was distributed as outlined in Table 3.9.

Table 3.9: Distribution of NMP and organisational questionnaires

Distribution Methods for questionnaires	
Study A: Healthcare Organisations in England n=246	**Study B: Non-Medical Practitioners in the UK**
n=156 Chief Nursing Officer/Director of Nursing for NHS organisations (previously used by Splisbury et al. 2009, with good results)	Organisational websites associated with the NMP roles advertised project and URL link: Association of Perioperative Practice (AfPP) Association of Physician Assistant Anaesthesia (APAA) aligned to Royal College of Anaesthetists (RCoA) Association of Cardiothoracic Surgical Assistants (ACSA) Royal College of Surgeon of Edinburgh (RCSEd)
n=90 Chief Executive (Private/Independent hospitals) Email via NHSmail.net account	Flyers with URL link distributed at one Healthcare Conference (August 2016)
Electronic and optional PDF format of questionnaire provided	Flyers with URL link sent to Higher Education Institutions (Universities) which run NMP courses
	Added URL to Twitter
	Snowballing via other practitioners and personal contacts
	Contacted Managed Voluntary Registers for PA and PA-As
	Electronic format of questionnaire
Data collection period	
6th June-31st August 2016	6th June-30th September 2016*
Reminder emails sent: 1st week of July & 2nd Week of August 2016	No reminders sent
*Extended due to summer holiday and aligned with University Autumn term	

Ethical and confidentiality considerations

Within healthcare the ethical principles autonomy, beneficence, non-maleficence and justice underpin many decisions and legislation to maintain standards and are also applicable within research (Beauchamp and Childress 2013). Additionally, ethical principles are included within the researcher's codes of conduct (NMC 2015) and are fundamental when undertaking research (Farrimond 2013:14). Historical research has led to national (DH 2005) and international codes of conduct such as the Declaration of Helsinki 1964 (World Medical Association 2016) being created to guide researchers to ethically and legally undertake research with people.

The Research Governance Frameworks for Health and Social Care England (DH 2005) outlines the responsibilities and standards required of formal research. Research Ethics Committees (REC) within the UK review and register research studies which involve both NHS staff and patients (Moule and Goodman 2014). The NHS Health Research Authority guidance decision tool was completed clarifying this study was not considered a research project (Appendix 9) and therefore did not require Integrated Research Application System. However, this research study involved questioning NHS staff, therefore ethical approval was obtained from Coventry University (P38400) in April 2016 (Appendix 10), thus complying with the British Education Research Association Ethical Guidelines (2011). Additionally, the study was also registered with the local NHS Research, Development and Innovation Department (GF0105) which confirmed NHS Research Ethics Committee approval was not required (Appendix 11).

Both questionnaires included an invitation letter (Appendix 12 and 13), which included the purpose for the research, a reassurance of confidentiality and

anonymity, thus fulfilling ethical and legal requirements as recommended by Brace (2013). This was outlined prior to gaining electronic agreement to participate. A shortened version was included within the email distributed via NHSmail. In Study A, organisations were assured their name would be removed after analysis and before publication to maintain confidentiality. To comply with data protection legislation (Data Protection Act 1998) data was downloaded to an encrypted memory stick and kept secure. Study data will be destroyed three years after project's completion (Coventry University 2013:7). Study B (NMPs) respondents were anonymous and were given the ability to withdraw following questionnaire submission by creating a unique identifier code to email the researcher within one week for their data to be removed. Thus providing respondents time to reconsider their participation within the research study, and is considered good practice (Farrimond 2013).

Limitations

Whilst this methodological approach supports exploring a wide geographical population, potential limitations specific to this study are acknowledged in Table 3.10.

Table 3.10: Potential limitations of this study's survey

Limitations of web-based descriptive survey	
Variable response rates & responder bias	Limited accessibility of sample and information. Potential sample imbalance and bias
	The number of NMP titles may provide difficulties for organisations to retrieve the required information
	Time restrictions of NMPs in clinical practice (Brodaty et al. 2013) due to increased workloads and current staffing shortages in healthcare (Ball et al. 2014)
	Difficulty accessing NMPs may further affect response rates and responder bias

Data Analysis

Both descriptive surveys collected quantitative and qualitative data. The quantitative data was analysed using Statistical Package for Social Sciences (SPSS) ® version 24 and Microsoft Excel using descriptive statistics, frequencies and cross-tabulation. Human data entry and coding can result in errors (Bowling 2014), however both these questionnaires were administered via BOS and self-completed by the respondents, therefore no additional human data entry was required thus improving accuracy. The electronic data was exported from the BOS system and stored on an encrypted, password protected USB. The electronic data was checked by the researcher to ensure the study's inclusion criteria were met, completeness and duplication; any organisational names were then removed, to comply with the ethical approval previously granted.

Qualitative data provided by the open questions and additional comments were analysed using a content and thematic analysis. Comment responses were printed and read to familiarise the researcher with the text. The content in the form of direct quotes, phrases, statements and words were colour coded according to words or phrase meanings. From these words, phrases, statements, emerging sub-themes and themes were identified. Whilst Ritchie and Spencer (1994) advocate pre-determining themes in line with the study's aim at the outset 'a priori', this was not the case in this study. The researcher had knowledge of previous literature, however coding was extracted from the comments and respondent language which allowed themes to emerge; some final themes were related to the healthcare service development (Creswell 2009). The final interpretation was tabulated to illustrate examples from respondents, sub-themes and themes, thus adding transparency and rigour to the study (Cronin, Coughlan and Smith 2015:162). The number of times the

words/phrases/statements were counted provided the researcher with an indication of how frequently a theme occurred and therefore the level of respondent interest in the subsequent theme since this was a quantitative study (Miles, Huberman and Saldana 2014).

Summary

This chapter has discussed the methodological approach taken and methods used, justifying a survey approach to address the research aim (Table 3.11). Using sound evidence, it has critically reviewed the keys steps taken to develop and deliver the organisational and NMP questionnaires. Chapter 4 will present the results of both these surveys.

Table 3.11: Overview of the research study's aim, methodological approach and methods

Aim: To explore NMP roles in acute healthcare settings within the UK		
Research	Study A - Healthcare Organisations n=246	Study B – Non-Medical Practitioners (NMPs)
Methodology	Descriptive Survey	Descriptive Survey
Sample population	NHS acute organisations- n=156 Independent/Private n=90	NMPs
Web-Administration	Bristol Online Survey	Bristol Online Survey
Distribution	Emails to Chief Nurse/Director of Nursing. Chief Executive (Private)	Flyers, Emails with URL link via professional organisations, HEIs and snowballing
Data collection	Electronic Web-based semi-structured questionnaire	Electronic Web-based semi-structured questionnaire
Collection period	6th June-31st August 2016	6th June-30th Sept 2016
Ethical Approval	Granted by Coventry University P38400 IRAS not required	Granted by Coventry University P38400 IRAS not required
Registered with the local NHS Research, Development and Innovation Department	GF0105	GF0105

Chapter 4 : Results

This chapter provides a systematic analysis of the data from the healthcare organisations (Study A) and the Non-Medical Practitioners (NMP) (Study B). The original study objectives in Figure 4.1 will be used as sub-headings for this chapter, after reporting the response rates from Study A and Study B.

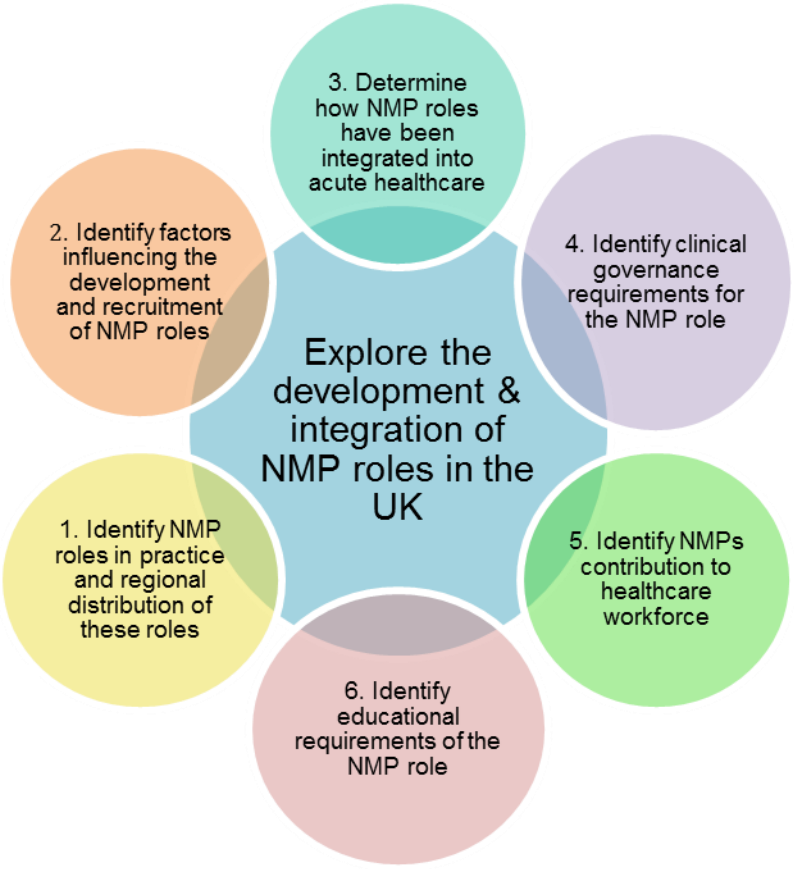


Figure 4.1: Research study aim and objectives

For reporting purposes, percentages reported have been rounded to whole numbers, which occasionally may not calculate exactly to 100%. Respondent sample numbers have been included illustrating the low returns. Most data collected was categorical (nominal or ordinal), however given the small number of responses obtained from individual NMP roles neither the Fisher Exact nor Chi-Squared tests

(non-parametric) could be applied, as low counts would incur errors leading to inaccurate reporting.

Survey response rates from the organisations (Study A) and NMPs (Study B)

The organisational (Study A) questionnaires (n=246) were electronically sent to acute NHS (n=156) and Private/Independent (n=90) healthcare organisations in England between 6th June-31st August 2016. A total of 29 questionnaires were returned, 28 (18%) from acute and 1 (1%) from Private/Independent organisation, providing an overall response rate of 12%. Figure 4.2 illustrates total of 23 useable questionnaires remained after data cleaning[1] (Moule, Aveyard and Goodman 2017), with an overall adjusted response rate of 9%. Given this low response rate this study's results are limited but given this was novel, exploratory work are useful nonetheless.

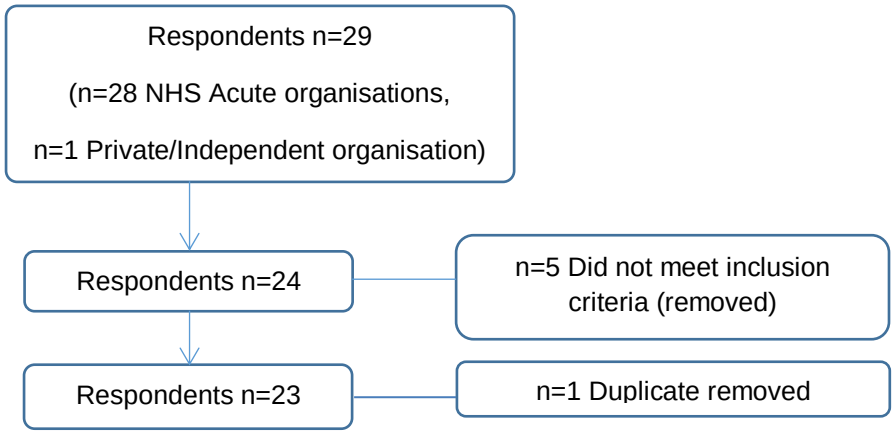


Figure 4.2: Flow chart of organisational respondents

Responses from the Non-Medical Practitioner (Study B) questionnaire survey; a total of 115 NMP survey responses were obtained, 19 were removed due to not fulfilling the criteria, 96 useable questionnaires remained for analysis (Figure 4.3).

[1] Removal of incomplete questionnaires

Due to the inability to determine the sample size as discussed in Chapter 3, a response rate could not be calculated.

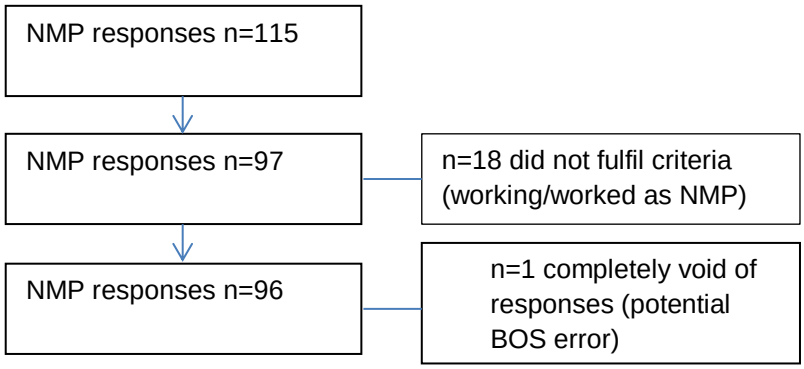


Figure 4.3: Flow chart illustrating Non-Medical Practitioner survey responses

Objective 1: NMP roles and the regional distribution of these roles

The first objective of this study was to identify NMP roles and ascertain their regional distribution within the UK. For the purpose of this study the Yorkshire and Humberside region was classified as North East of England, whilst London and East Anglia regions were classified as the South East of England. From the 23 responding organisations only North East of England was not represented, indicating an uneven distribution and poor response overall. From the responding organisations in Study A, n=9/23 represented NHS Trusts, n=7/23 District General Hospitals, n=4/23 Foundation Trusts, n=3/23 teaching hospitals and n=1/23 private hospital. Figure 4.4 illustrates the responding organisations by geographical location and hospital size in England. 48% (n=11/23) of the respondents represented small organisations with <500 beds, which were evenly distributed between North, Midlands and South of England. Only 13% (n=3/23) represented large hospitals >1000 beds. 96% (n=22/23) represented the NHS, 13% (n=3/23) represented teaching hospitals. All

but one responding organisation (96%) employed NMPs, with this one organisation considering recruiting a NMP role.

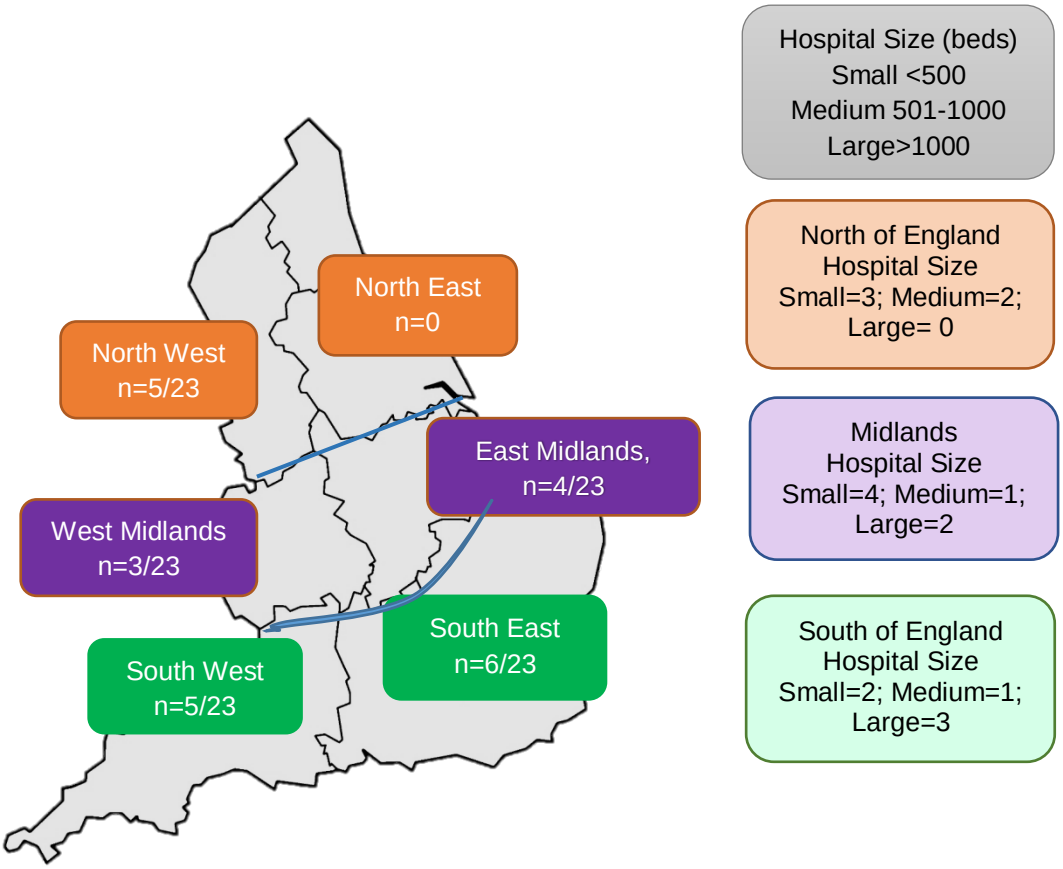


Figure 4.4: Organisational respondents by regional location in England including details of responding hospitals to the right

From a NMP perspective (Study B), respondents represented all UK regions (Figure 4.5); the Midlands (37.5%, n=37/96) had slightly more; fewer responses were obtained from Northern Ireland (1%), Scotland (3%) and Wales (4%).

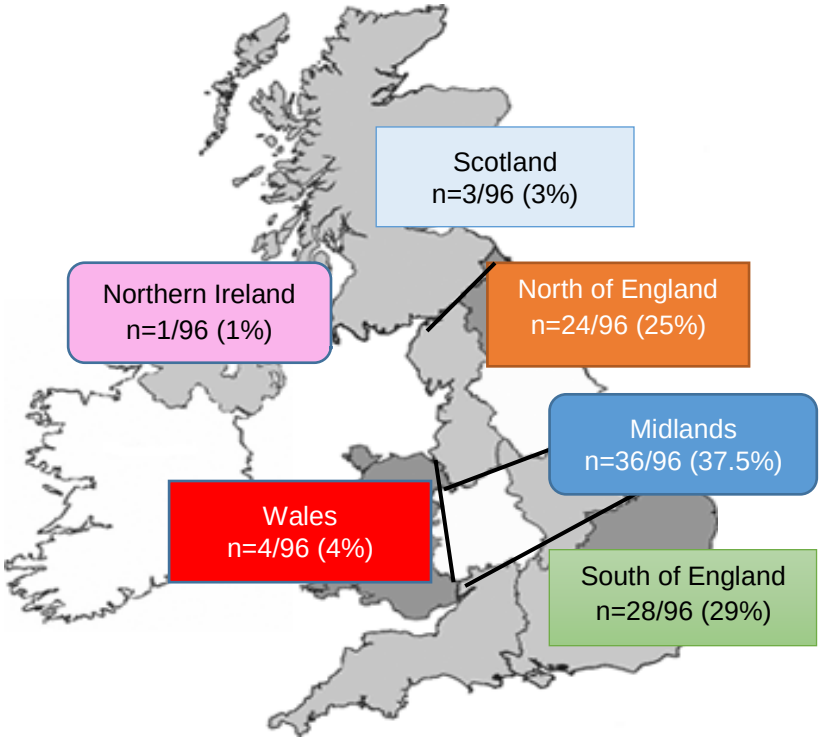


Figure 4.5: Non-Medical Practitioner responses illustrated within geographical regions in the United Kingdom

NMP respondents were able to provide multiple answers; responses indicated NMPs worked in a variety of hospital setting (Figure 4.6). NHS being the biggest employer (n=93); Foundation Trusts n=47, NHS Trusts n=46, 11 were employed in teaching hospitals and four in District General Hospitals. Only six reported working in Private/Independent Hospitals, one in a Diagnostic Treatment Centre and three in General Practice.

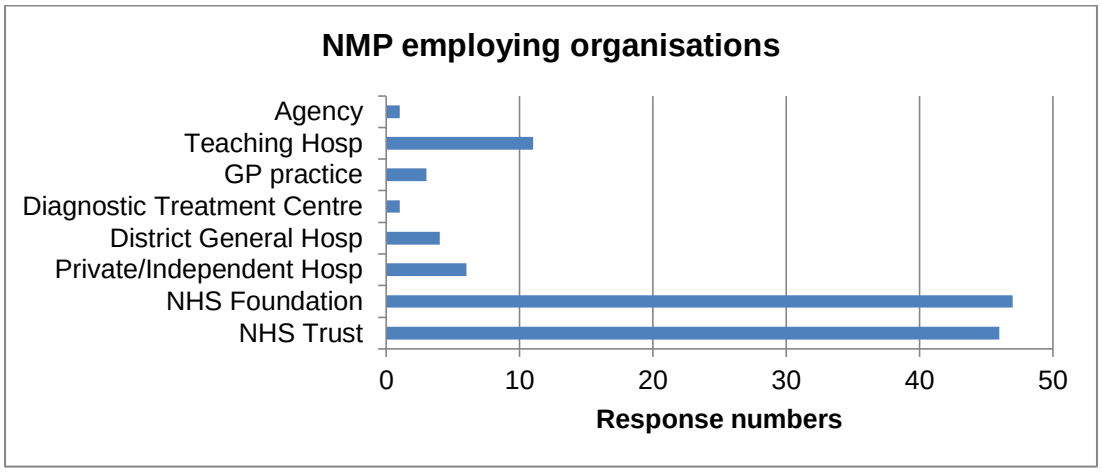


Figure 4.6: Organisations which employ Non-Medical Practitioners

NMP respondents reported being employed under a variety of titles (Table 4.1); two most common were 33% (n=32/96) SCP and 31% (n=30) PA-A.

Table 4.1: Title of Non-Medical Practitioner roles

Variable	Number n=96	Percentage (%)
Non-Medical Practitioner role title		
Arthroplasty Practitioner (AP)	1	1
Advanced Clinical Practitioner (ACP)	12	12.5
Perioperative Specialist Practitioner (PSP)	8	8
Physician Associate (PA)	3	3
Physician Assistant Anaesthesia (PA-A)	30	31
Surgical Care Practitioner (SCP)	32	33
Surgical First Assistant (SFA)	10	10

Responding NMPs reported 71% (n=68/96) had been employed within their organisation for less than 11 years (mean of 8-years) (Figure 4.7).

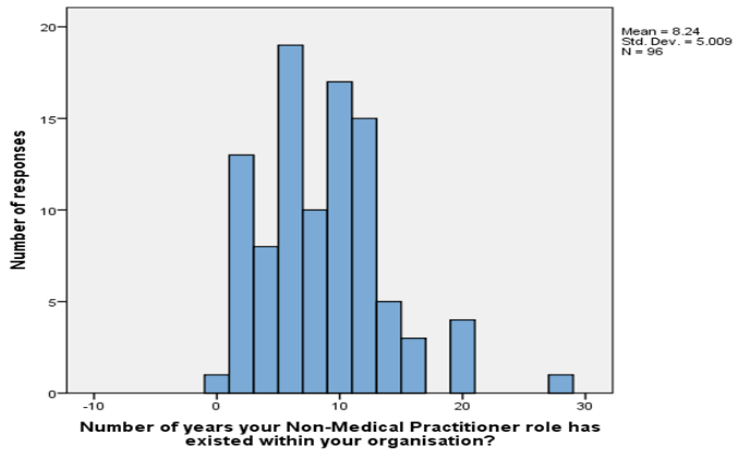


Figure 4.7: Number of years the Non-Medical Practitioner role has existed within their organisation

Objective 2: Influencing factors on the development and recruitment of Non-Medical Practitioner roles

The second objective of this study was to identify the factors influencing the development and recruitment of NMPs. Responding organisations identified two main factors which led to the development of NMP roles. NMP roles were predominantly developed in response to service needs and workforce development

and to a lesser extent changes in national policy. Only one responding organisation reported developing NMP roles to reduce locum medical expenditure.

Similarly, NMPs perceived the role was developed by their organisation due to several factors (Table 4.2). Two main factors emerged as being the primary drivers in developing NMP roles; improving service development and workforce development such as extending the team's skill mix and the reduction in doctors from the deanery.

Table 4.2: NMPs perceived organisational drivers to developing NMP roles

Influencing factors	Responses	Theme
Development of new services Improve service delivery Response to service need Redesign of service Improve access to healthcare services Reduce A&E targets Reduction of waiting lists Total	33 59 42 9 9 4 6 **162**	**Service development**
Developing career pathways Extension of team skill mix Reduction of workforce costs Reduction in doctors from the deanery Promote inter-professional working Total	24 32 17 31 8 **112**	**Workforce development**
European Working Time Directive Government Initiative such as National Practitioner Programme Total	33 21 **54**	**National Policy**
Supervision of Surgical First Assistants Allow Registrars console time in Robotic surgery	1 1	**Other**
Reason not known	1	**Not Known**

Successful development is reliant upon supportive management, good leadership and organisational commitment. Of the 66 responding organisations, 54.5% (n=36/66) reported the development of the NMP role was led by nursing or educational directors or managers, 21% (n=14/66) by clinical directors or Modern Matrons and only 9% (n=6/66) from corporate or board level. Business cases

supported the development of NMP roles in 83% (n=19/23) of responding (Figure 4.8).

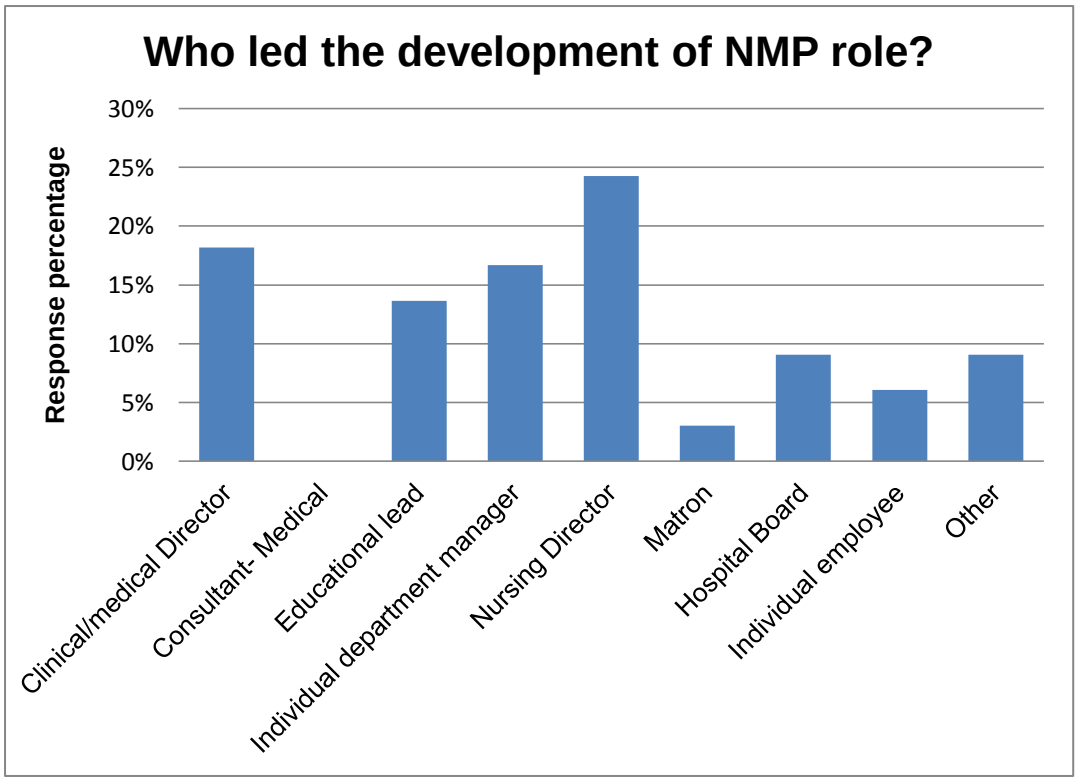


Figure 4.8: Graph indicating who led the development of the Non-medical Practitioner role within the organisation

NMPs were requested to identify the main factors which facilitated or enabled the introduction of their role (Table 4.3, page 87). From 91 statements six main themes emerged; service redesign associated with the lack of doctors and service flexibility was the most common factor (32 statements) which facilitated the introduction the NMP role. The second most common factor (19 statements) identified a clinical leader was required, specific leadership qualities such as strong, supportive/active and positive which are indicative of transformational leaders were also reported (13 statements). 10 statements highlighted education and training requirements, with an equal number suggesting a business plan would facilitate the introduction of the NMP role. Additionally, 7 statements recommended promoting the NMP role to provide a better understanding.

Table 4.3: The main factors facilitating/enabling the introduction of the NMP role

Response examples	Number of statements	Sub-theme	Themes
Change in workforce Service flexibility Lists elsewhere Patient demand Reliable service provision New equipment Lack of doctors EWTD	32	Change to service delivery	Service redesign
Positive consultant Supportive head of nursing Active consultant Senior medical doctor wanted Supportive manager	19	Supportive clinical lead/manager	Clinical leader with Transformational leadership qualities
Understanding Engagement Willingness Active Positive Enthusiastic Ambassador Motivated Leadership Strong	13	Leadership qualities	
NMP skills Qualifications Positive role models University training Register of NMP	10	Skilled NMP	Education and training of NMPs
Cost savings Demonstrate value for money Decide why the role is required Career structure/succession planning Vision Benefits of NMP role Funding	10	Financial planning	Business planning
Understanding of NMP role Acceptance of NMP role Social awareness	7	Understanding of role	Promotion of NMP role

The recruitment process was also explored, responding organisations differed in the level of experience required by organisations; 39% (n=9/23) required 3-5 years, whilst 26% (n=6/23) required more than 5-years' healthcare experience

(Figure 4.9). Interestingly, 82% of NMPs had over 5-years' clinical experience prior to commencing their NMP role, yet of these 21% (n=20) had over 20-years' experience (Figure 4.10). When cross-tabulated PA-A roles were more likely to have less than 3-years' experience prior to commencing the role (n=8).

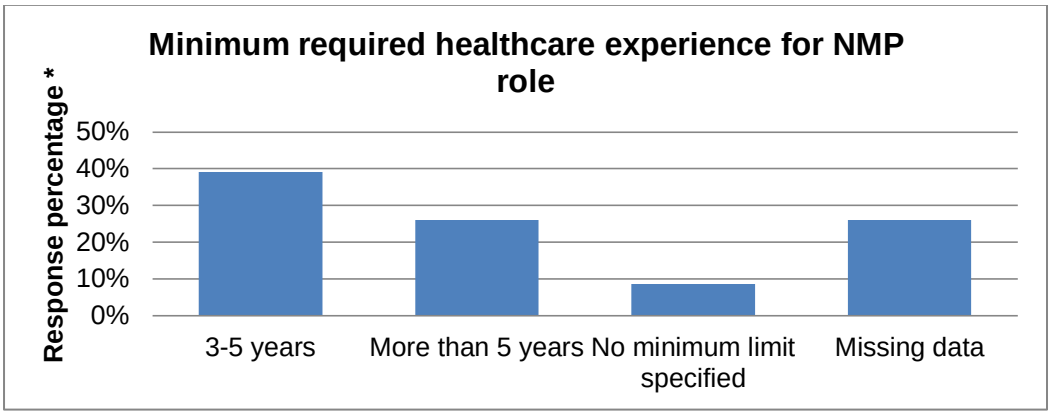


*Figure 4.9: Level of healthcare experience required by organisations when recruiting Non-Medical Practitioner roles [*17/23 responded-6 missing data]*

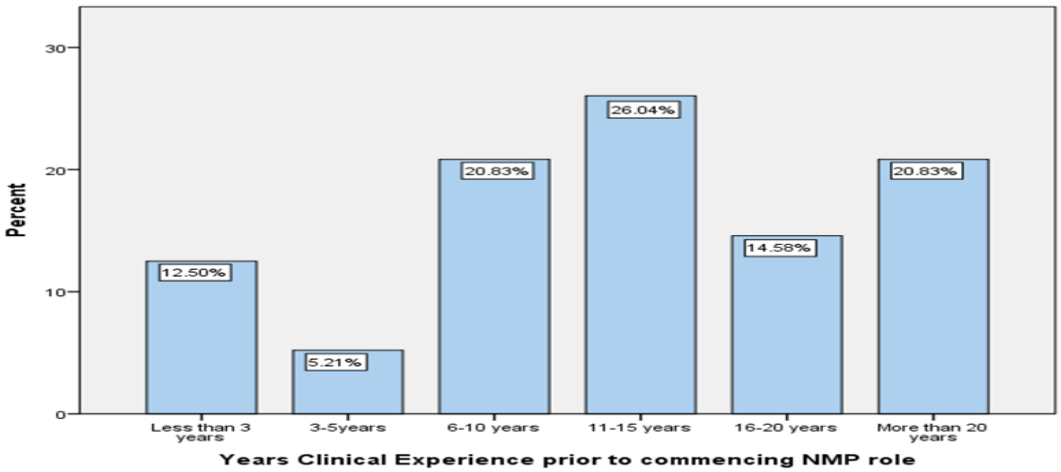


Figure 4.10: Number of years of clinical experience practitioners had prior to commencing the NMP role

When recruiting NMPs, responding organisations reported a registered nurse was considered a suitable practitioner all roles except the PA, whilst an ODP was considered suitable for all except the ACP role and was more commonly considered for a PSP and SFA role (Figure 4.11). From a NMP perspective, 69% of NMPs worked in the Operating Department before commencing the NMP role (Figure 4.12).

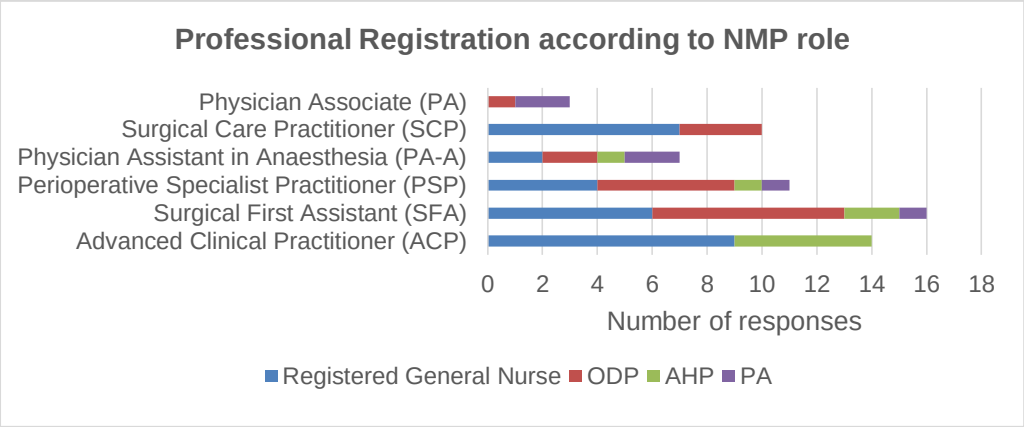


Figure 4.11: Professional registration according to Non-Medical Practitioner role

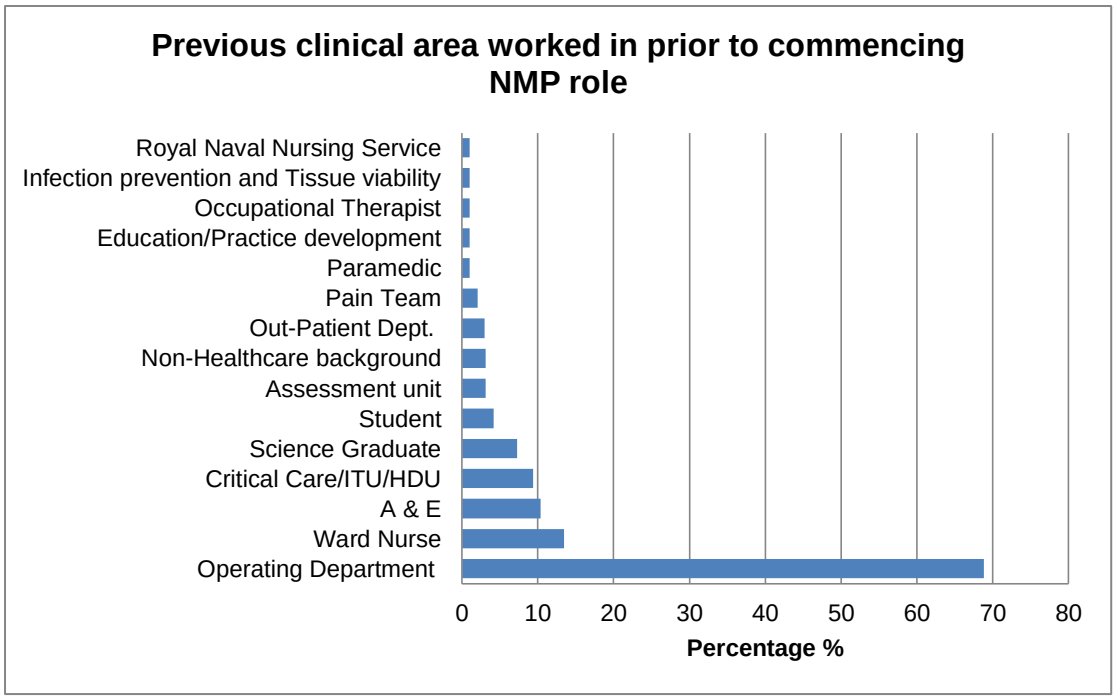


Figure 4.12: Non-Medical Practitioners previous clinical working environment prior to undertaking NMP role

Responding NMPs were 69% (n=66/96) female and 31% (n=30/96) male, with 67% (n=64/96) from a nursing background. Of the NMP respondents 78% (n=75/96) worked full-time, 92% (n=88/96) worked Monday-Friday, 30% (n=29/96) worked weekends; indicating NMP respondents work a variety of shifts throughout a seven day week, whilst 10% (10/96) were rostered on-call (Table 4.4).

Table 4.4: Demographics of Non-Medical Practitioner survey responses

Variable	Number n=96	Percentage (%)
Gender		
Male	30	31
Female	66	69
Professional Background		
Biomedical/Biological scientist	7	7
Nurse	64	67
Occupational Therapist	1	1
Operating Department Practitioner	23	24
Radiographer	1	1
Type of Employment		
Full-Time	75	78
Part-Time	17	18
Secondment	3	3
Agency/bank	2	2
Shift Pattern		
Mon-Frid (8-4pm/9-5pm)	88	92
Evenings	14	15
Weekend	29	30
On-call	10	10
Other	12	12.5

To simplify analysis of the level of NMP's education required by organisations when recruiting NMP roles, education was coded as undergraduate, graduate and postgraduate. When recruiting NMPs, responding organisations reported requiring differing levels of education (Figure 4.13). ACP roles were three times (39%) more likely to require a postgraduate qualification, as well 52% (n=12/23) of organisations also expected a specialist qualification, which differed from all other NMP roles (Figure 4.14).

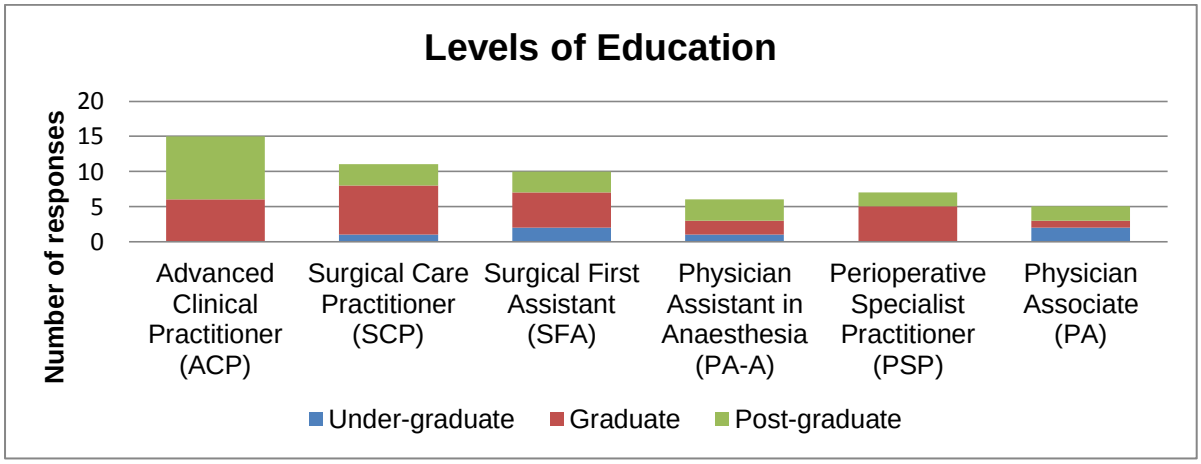


Figure 4.13: Required level of education required by organisations when recruiting Non-Medical Practitioner roles

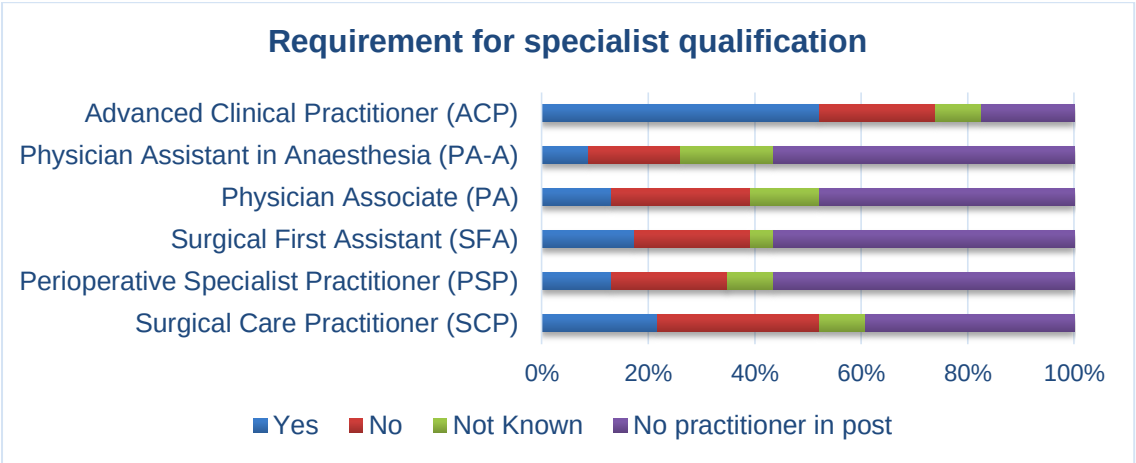
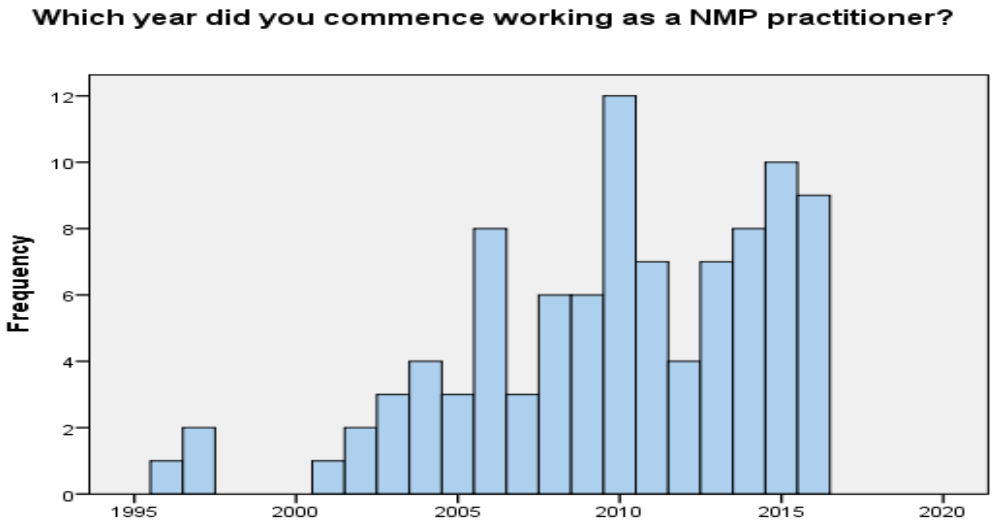


Figure 4.14: Specialist qualification required by organisations for the recruitment of Non-Medical Practitioner roles

NMP respondents indicated the NMP role commenced over a wide time-frame (Figure 4.15); the earliest NMP started in 1996, numbers gradually increased from 2001, 2009 being the mean year of commencement. NMP role commencement trajectory was correlated to national policy development indicating an association.



National Policy	Year
NHS Plan (DH 2000)	2000
Modernisation Agency Changing Workforce Programme (NHS 2001)	2001-2005
New Ways of Working (DH 2007a) Modernising Medical Careers (2008)	2007 2008
European Working Time Directives effective	2009
Major Trauma Centres established (DH 2012b) Health & Social Care Act (2012a)	2012
NHS England Five Year Forward View	2014
NHS England Leading Change, Adding Value: A framework for nursing, midwifery and care staff. Imison, C., Castle-Clarke., Watson, R. (2016)	2016a 2016

Figure 4.15: Compares the commencement year of NMP roles with national policies

In exploring the future development and sustainability of the NMP role, only a third of responding organisations reported that they would be likely to recruit NMPs in the future, although from the third of organisations considering recruiting more NMPs, 74% (n=17/23) were likely/very likely to recruit ACPs (Figure 4.16). In

contrast, 74% (n=71/96) of NMP respondents thought another NMP would be recruited by their organisation if their position became vacant, although 26% were less confident (Figure 4.17).

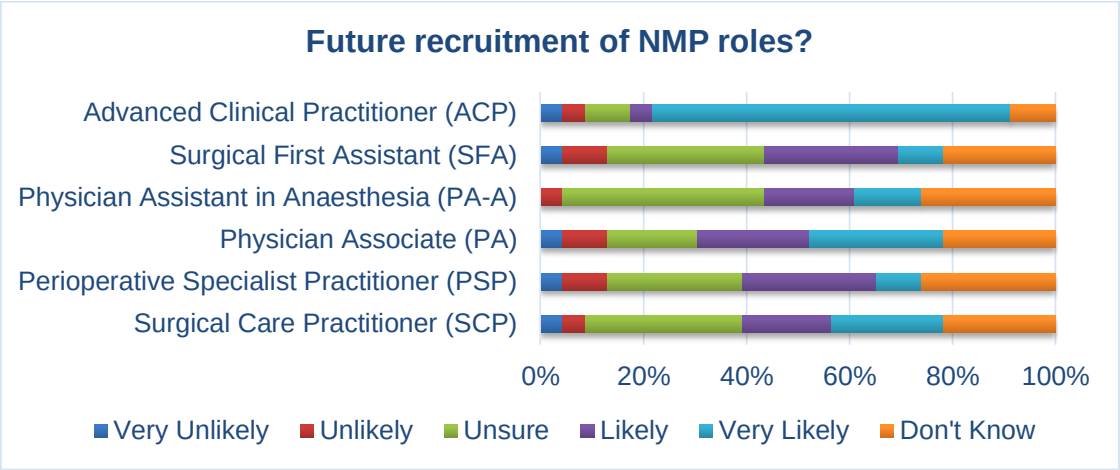


Figure 4.16: Likelihood of organisations recruiting Non-Medical Practitioner roles in the future

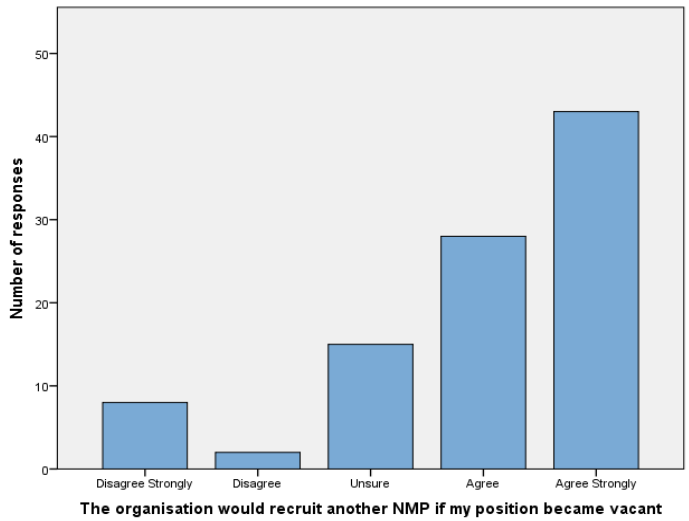


Figure 4.17: Non-Medical Practitioners perception of replacement of their NMP role by the organisation

NMP respondents provided reasons why they applied for their role in the open-ended questions (Table 4.5). In total, 141 statements were obtained; eight sub-themes with two main themes emerging. The most common reason reported by NMPs for applying for the role was to develop personally and professionally; extending scope of practice was therefore considered career development. To a

lesser extent, NMPs reported wanting to remain in clinical practice, some specifically wanted to “follow the patient journey”, whilst others had an interest in the speciality.

Table 4.5: Reasons why Non-Medical Practitioners applied for the NMP role

Responses	Number of statements	Sub-Themes	Themes
Career development Advancement of skills Promotion More responsibility and autonomy Had the qualifications Appealing role Career opportunity Good move forward Encouraged by nurse consultant No future in current organisation	49	Advancement of skills Professional Development	Personal and professional (career) development (81)
Wanted a challenge Dissatisfaction with current job Previous work “toxic” Improve CV Opportunity to change Something new Challenge Further skills Gain skills Extend scope of practice	32	Develop new skills Own development Extended scope of practice	
Remain at the “pit-face” Remain clinical, Not management Develop clinically Follow patient journey Interest in surgery Work more with patients Didn’t want a lab job Enjoyed speciality/type of work Input into patient care Patient contact	43	Clinical working Interested in clinical speciality Patient centred	Clinical (49)
Enhance team dynamics Stay involved with surgical team Complement team	6	Team working	

Responses	Number of statements	Sub-Themes	Themes
Short of doctors Develop new role Promote new ways of working Development of healthcare Instrumental in bringing idea to Trust Replaced my previous role	6	Redesign of services	Service development (6)
Earn more money Well paid	2	Improved pay	Financial
Flexibility of hours on Bank contract	1	Flexible of working hours	Flexible working
Geographical area	2	Location	Location

Organisations reported a wide variation in Agenda for Change (AfC) grading, Band 6-8c for NMP roles (Figure 4.18). The majority of NMPs were graded at Band 7 (n=32); PA and PA-As were most consistent banding at Band 7-8a, whilst ACPs had the widest grading from Band 6-8c. The highest banding 8b (n=4) and 8c (n=1) were based in the South of England. Open comments from organisations reported NMP roles start in trainee positions, Band 6/7 and attain Band 7/8a on successful completion of their training programme.

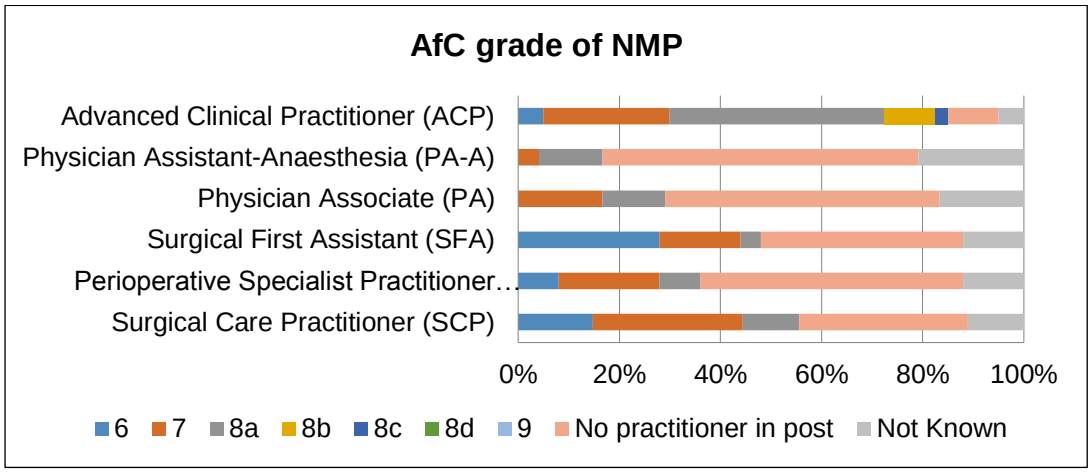


Figure 4.18: Agenda for Change (AfC) Banding of Non-Medical Practitioner roles from organisational perspective

Similarly, NMPs also reported a wide variation of AfC pay Bands 5-8d; 52% (n=49/96) were employed on Band 7, whilst 31% were Band 8a; one PA worked in General Practice as equivalent to 8d (Table 4.6).

Table 4.6: Agenda for Change Pay Banding of NMP roles from NMP perspective

Agenda for Change Pay Band/equivalent	Number n=96	Percentage (%)
5	2	2
6	12	12.5
7	49	52
8a	30	31
8b	2	2
8c	0	0
8d	1	1

Objective 3: Integration of Non-Medical Practitioner (NMP) roles

The third objective of this study was to determine how NMP roles had been integrated within acute healthcare. The communication of new roles within an organisation can affect integration. Organisations reported using a combination of communication strategies to inform staff of the development of NMP roles (Figure 4.19); organisations had the ability to provide multiple answers. Meetings or working party forums were undertaken by 52% (n=24/46) of organisations, whilst electronic media was used by <25% of organisations to communicate the development of NMP roles to staff.

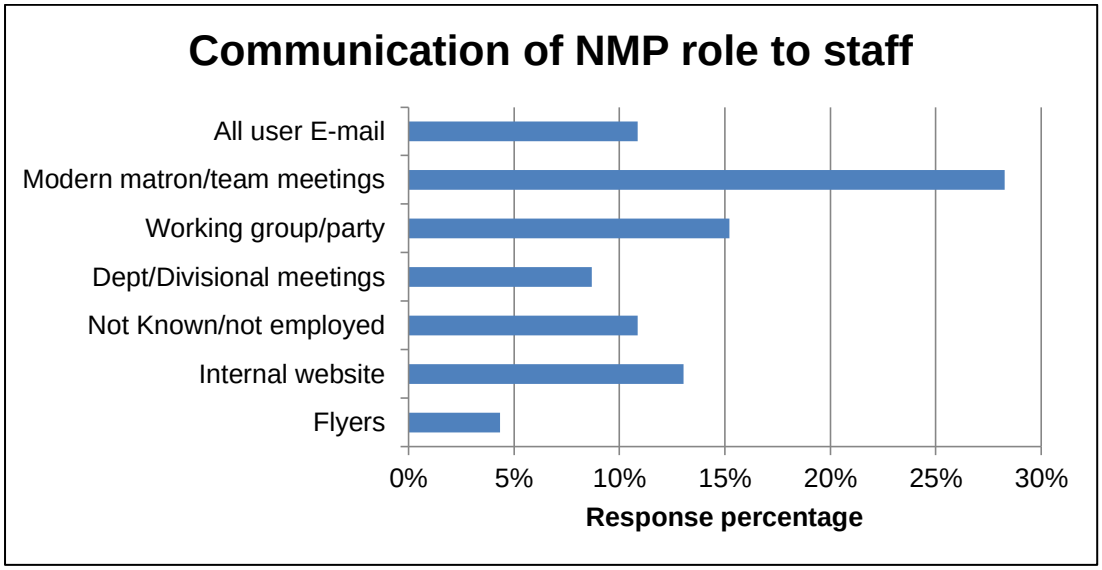


Figure 4.19: Strategies used within organisations to communicate the development of the Non-Medical Practitioner role [multiple answers permitted]

Understanding new roles can also affect integration; NMPs using a rating scale reported how informed/aware they perceived health professionals were regarding their role (Figure 4.20). Senior doctors and nurses had a greater awareness of NMP roles; 57% (n=55/96) of consultant doctors and 40% (n=55/96) of Specialist Registrars (SpR) were fully aware of the NMP role. NMPs perceived Advanced Practitioners were more fully informed (23%) than senior nurses (16%), although 51% (49/96) senior nurses had some awareness of the NMP role. 44% (n=42/96) of NMP perceived managers had limited/no awareness of their role. Interestingly, NMPs perceived students to be least aware; nursing students 68% (n=65/96) and medical students 64.5% (n=62/96).

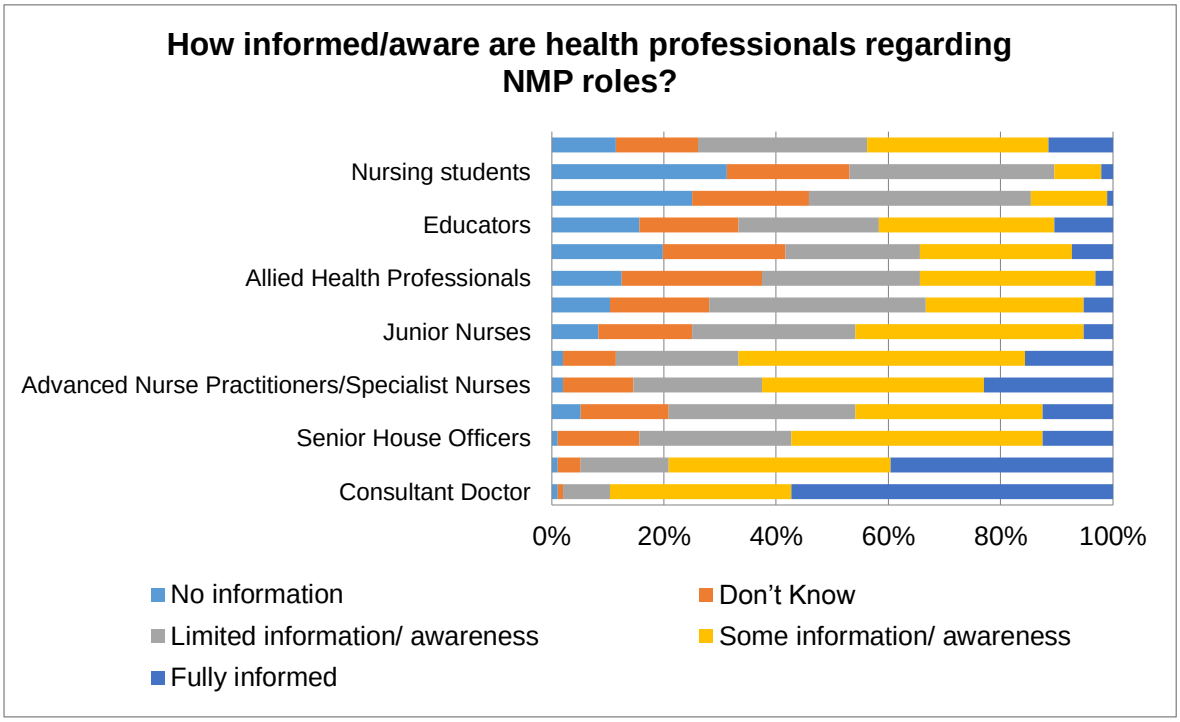


Figure 4.20: NMPs perception of Health professional's awareness and information regarding the NMP role

From a patient perspective, NMPs perceived 38.5% (n=37/96) of patients had some understanding of the NMP role, but reported only 2% (n=2/96) believed patients fully understood it (Figure 4.21). Various methods of communication were used by responding NMPs (Figure 4.22); NMPs most commonly (n=70) reported using verbal explanation to inform patients of their role, n=53 described their role to patients using their title and n=68 wore their name badge. However, written information was rarely used and n=19 NMP respondents undertook no formal discussion with their patients. When describing their role n=41 NMPs reported they were "an assistant" to the doctor (Figure 4.23, page 100).

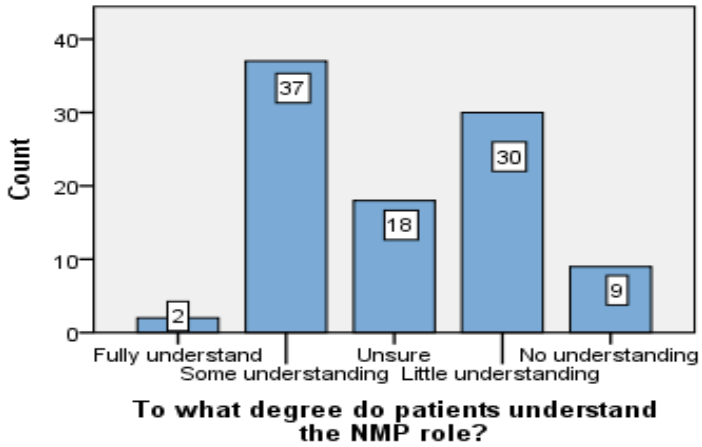


Figure 4.21: Non-Medical Practitioners perception of patient understanding of the NMP role

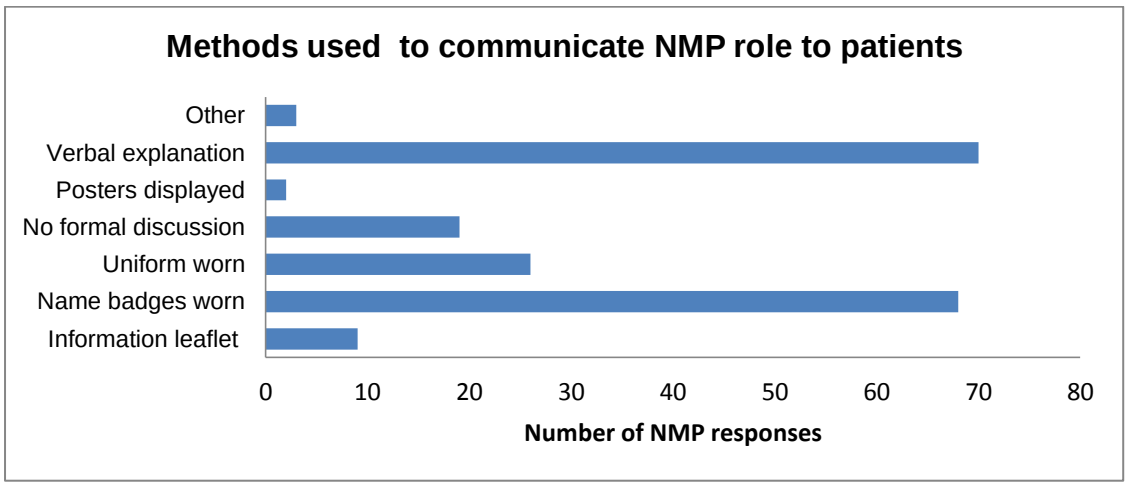


Figure 4.22: Methods of communication used by NMPs when informing patients of their role [multiple answers permitted]

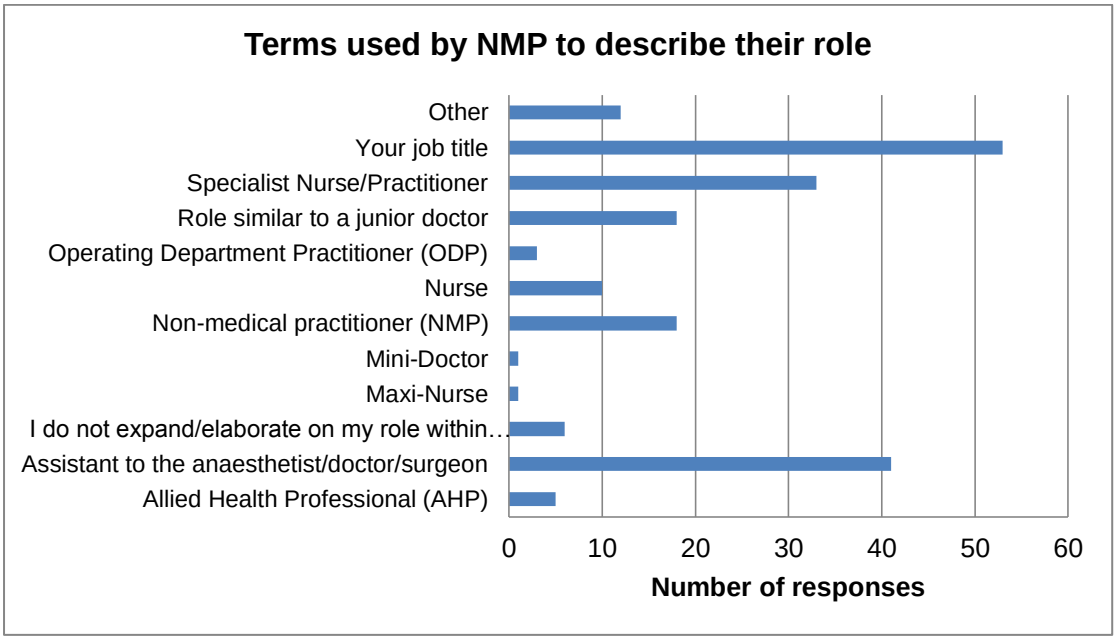


Figure 4.23: Terms used by Non-Medical Practitioners to describe their role to patients [multiple answers permitted]

Additionally, to establish how the NMP role had developed after integration, NMPs provided comments in an open-ended question on how they believed their NMP role had changed since commencing the role (Table 4.7). From 103 statements five sub-themes emerged, which were divided into two main themes. The majority perceived the NMP role had improved team working, through professional and personal development, role expansion, improved knowledge, skills and acceptance. However, a few NMPs conveyed a lack of role development; with some NMPs having skills removed by changes in policy/guidance.

Table 4.7: Changes to the Non-Medical Practitioner role

Response examples	Number of statements	Sub -themes	Main Theme
Clinical duties have expanded New skills attained More complex cases Greater autonomy Decision making More responsibility Additional duties Constantly evolving Extended scope of practice More enhanced role	55	Role expansion in clinical practice	Improved team working (93)
Acceptability Reliance Respected Trusted in abilities Less supervision Member of the team Better recognition Independent practice Team member Recognition Raised expectations	27	Acceptance & Improved understanding of role	
Increased Knowledge and skills Advanced roles learned Skill enhancement	6	Improved knowledge and skills	
Improved job satisfaction Confidence Competence Lead team Undertake surveillance work	5	Improved personal development	
Removal/restriction of skills Less autonomy Restrictions due to policy/guidance/regulation Changing goal posts of "where we fit in workforce" Less time in theatre No ward work All theatre Increasing admin, less clinical Little progression No change	10	Restrictions Lack of professional identity Lack of variety Static	Lack of role development (10)

Workforce structures within organisations can influence the integration and governance of new roles. Organisations reported NMP roles were equally divided between medical (43%, n=15/35) and nursing (46%, n=16/35) teams (Figure 4.24).

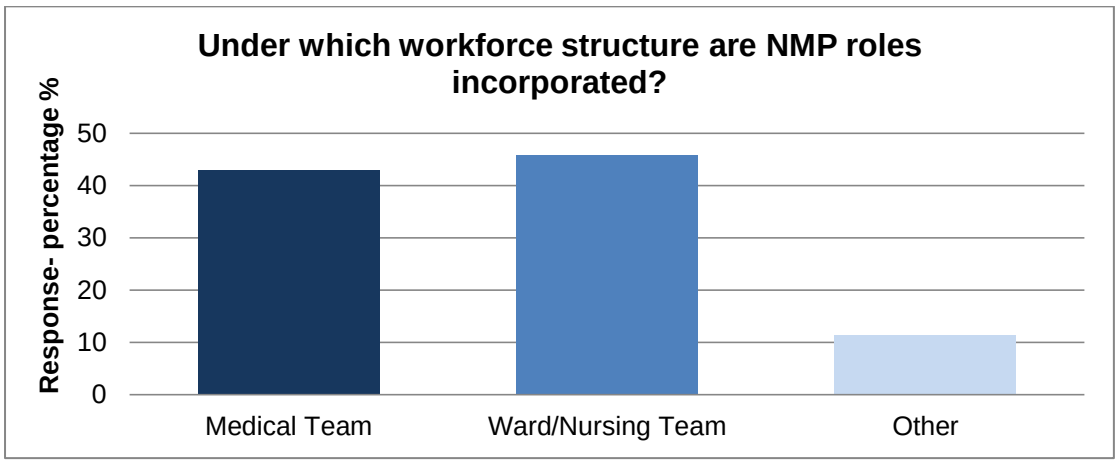


Figure 4.24: Incorporation of Non-Medical Practitioner roles within the organisational workforce

From a clinical perspective, organisations reported NMP roles worked within a wide range of clinical specialities (Table 4.8, page 103) with no dominant clinical speciality identified. However, whilst NMP respondents also reported working in a variety of clinical specialities (Figure 4.25, page 103), three specialities were more commonly reported; General Surgery including Colorectal (35%), Anaesthetics (33%) and Orthopaedics (30%).

Table 4.8: Clinical specialities where Non-Medical Practitioners work

Clinical specialities	
Breast	Mental Health
Anaesthetics	Nutrition
Cardiology	Oncology
Cardiothoracic	Orthopaedics
Colorectal	Paediatrics
Critical Care	Renal
Emergency Dept.	Sexual Health
Endoscopy	Stroke Wards
General Surgery	Surgery
Gerontology	Theatres
Hepatology	Therapies
Macmillan Services	Urology
Medical Assessment Units	Vascular
Medicine	

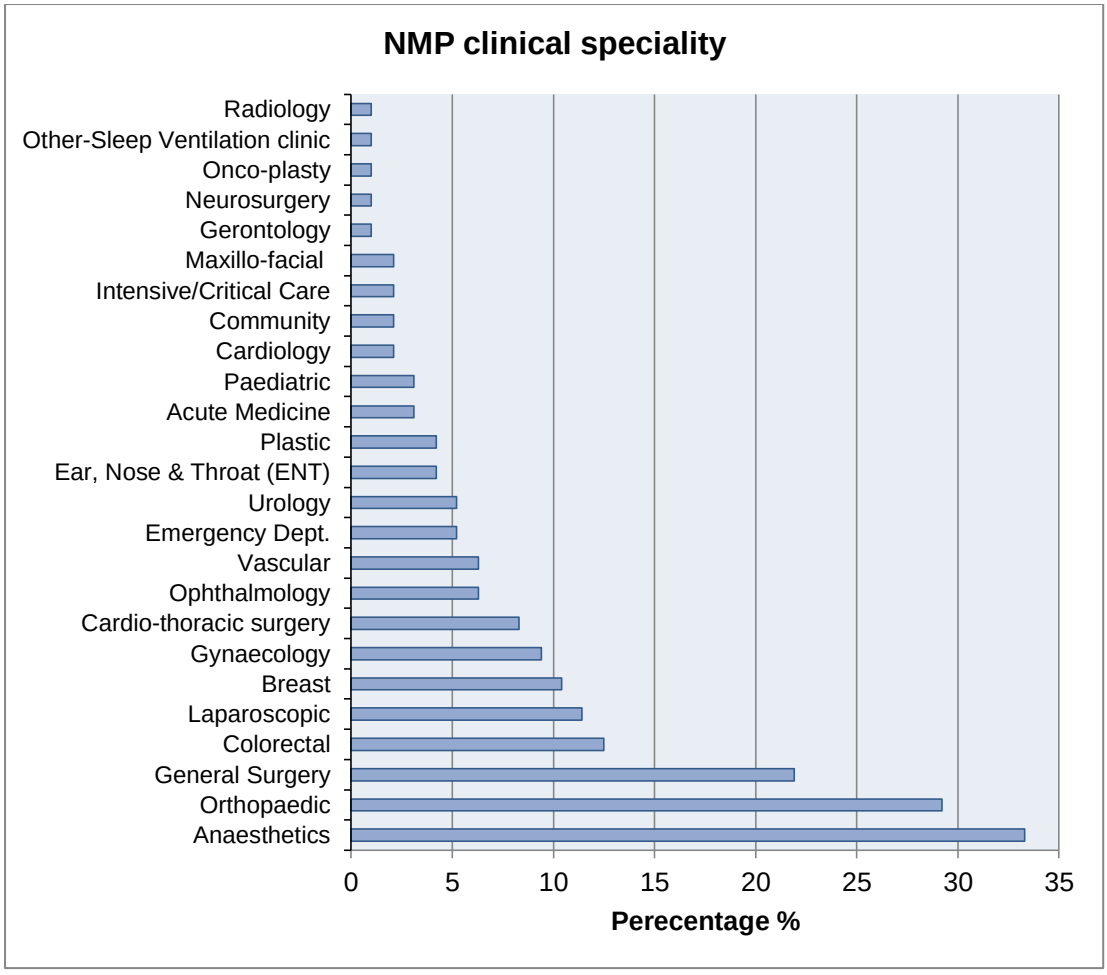


Figure 4.25: Non-Medical Practitioners clinical speciality

To establish a clearer picture of NMPs clinical working, the frequency of working in clinical areas was cross-tabulated with the NMP role. NMP respondents

indicated some NMP roles worked in specific clinical areas; PA-A and SFA worked very frequently within the Operating Department (Figure 4.26). Whilst the AP and PA undertook new (Figure 4.27) and follow-up clinics (Figure 4.28, page 105) never working in the Operating Department or on the wards (Figure 4.29, page 105). In comparison, PA-As reported more variety within their role, 43% working on the wards (Figure 4.29) and 53% working in pre-operative anaesthetic assessment (Figure 4.30, page 105).

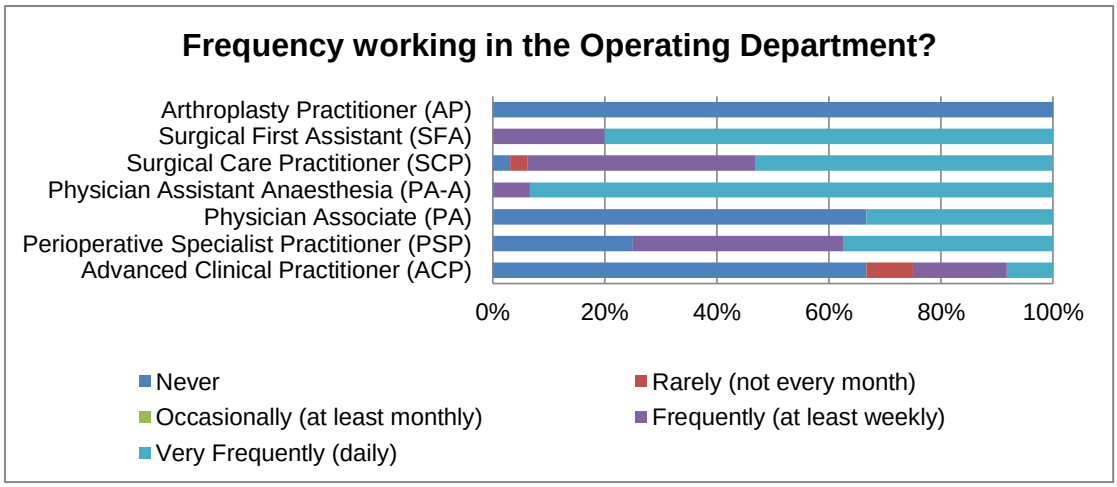


Figure 4.26: Non-Medical Practitioners who worked in the Operating Department

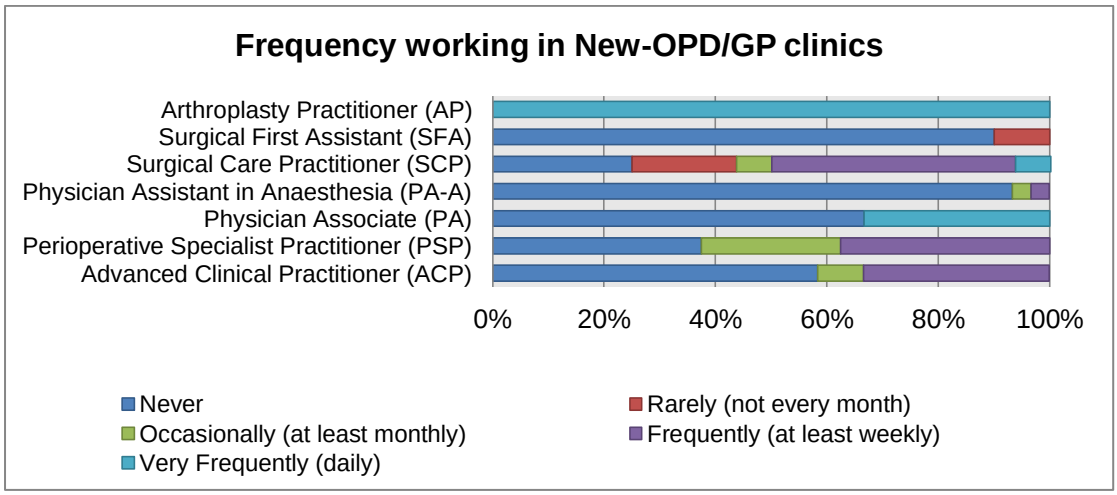


Figure 4.27: Non-Medical Practitioners who worked in new patient clinics

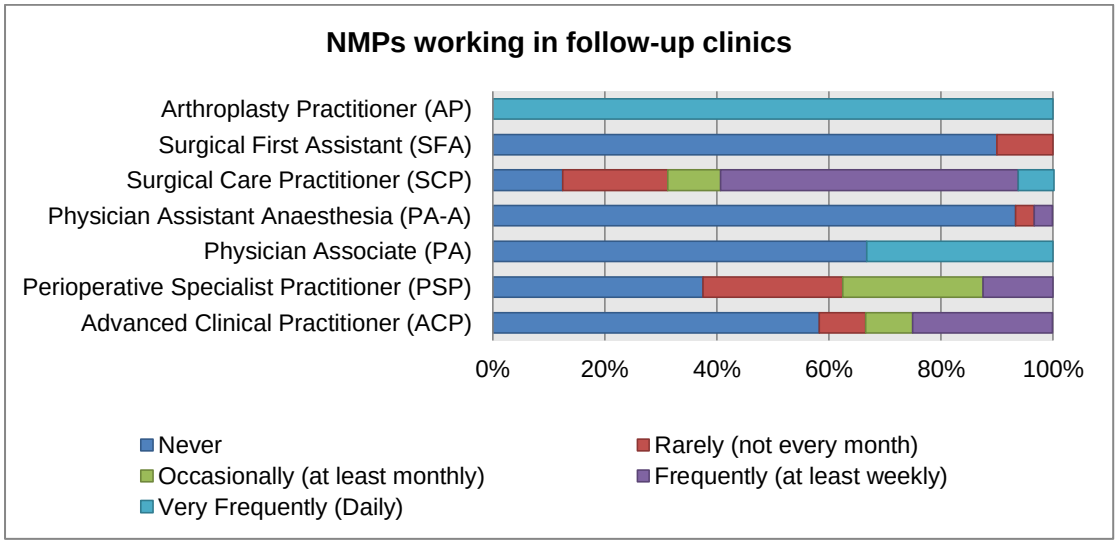


Figure 4.28: Non-Medical Practitioners who worked in follow-up clinics

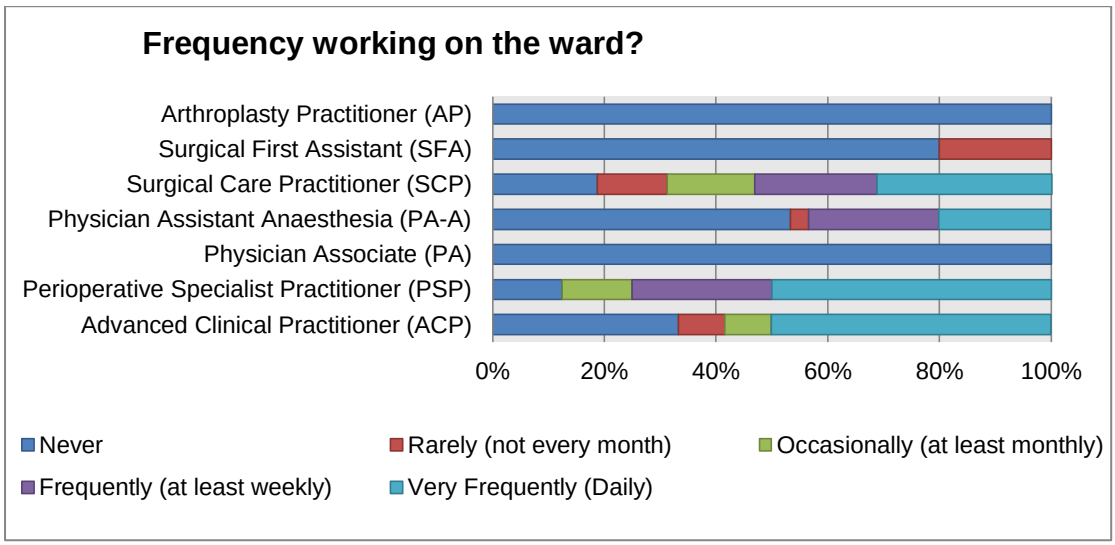


Figure 4.29: Non-Medical Practitioners who worked in the ward environment

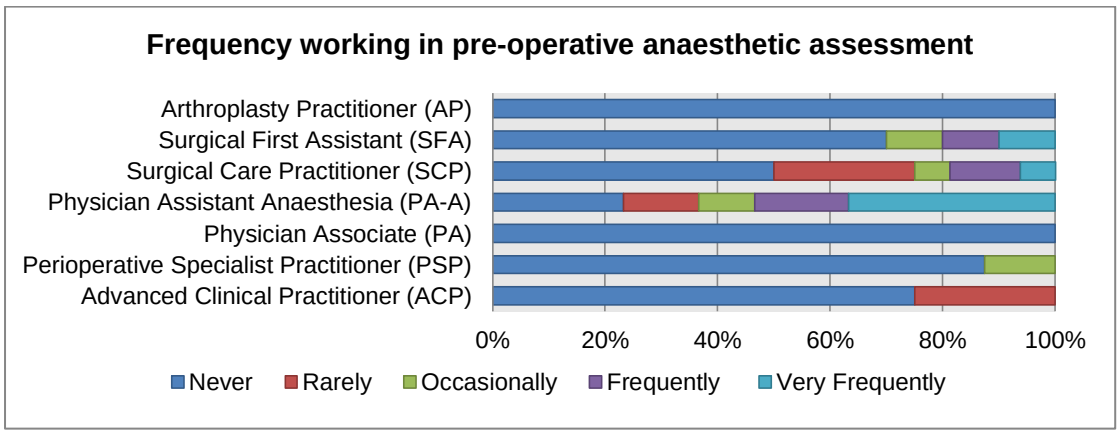


Figure 4.30: Non-Medical Practitioners who worked within pre-operative anaesthetic assessment

However, SCP, PSP and ACP roles showed versatility; NMP respondents reported working on the wards, in clinics and the Operating Department. Few NMPs

worked in acute clinics (Figure 4.31); PSPs most frequently undertook this clinic (25%). NMP respondents report NMP roles were less likely to work in specialist clinical areas; less than a quarter worked in Intensive Care/High Dependency Units (Figure 4.32), whilst 41% ACP's were most likely to work in Emergency Departments (Figure 4.33, page 107).

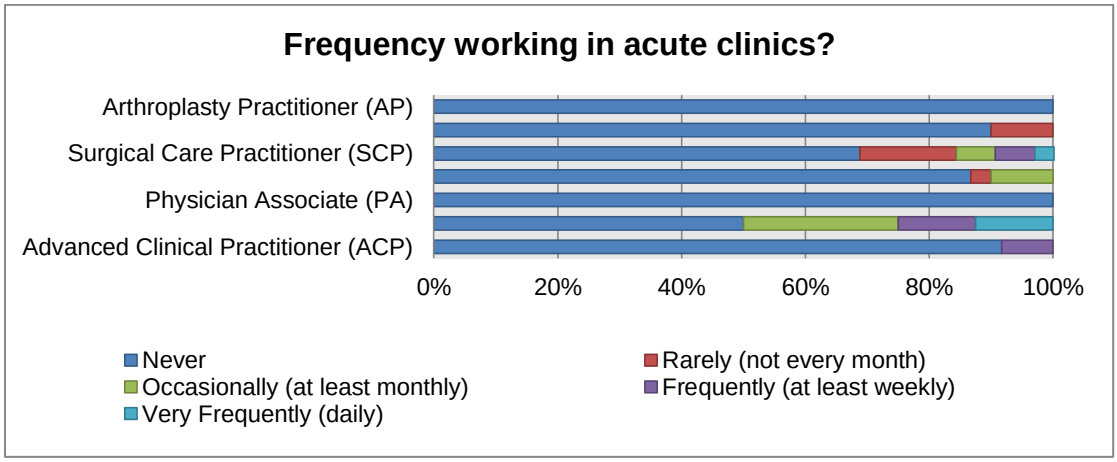


Figure 4.31: Non-Medical Practitioners who worked in acute clinics

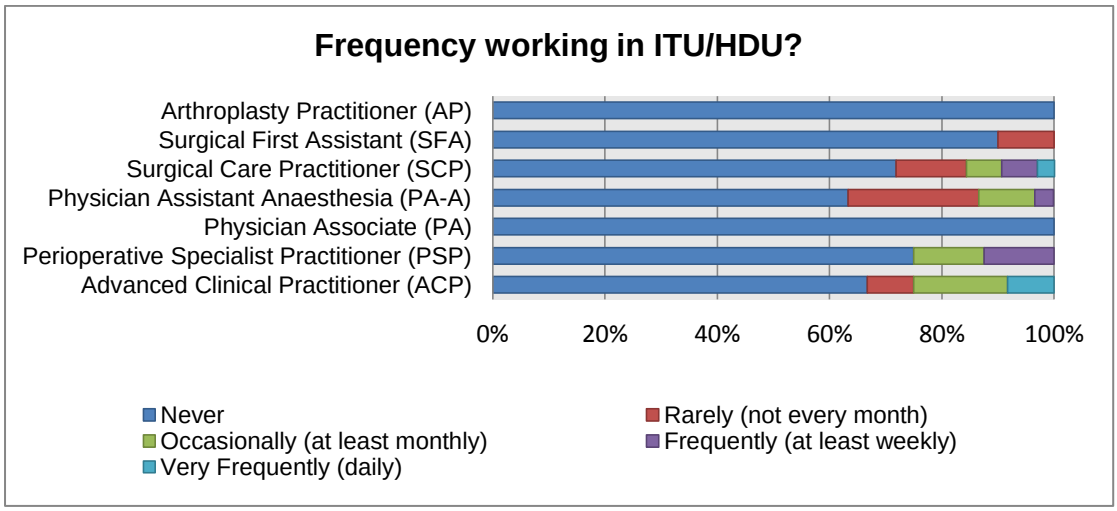


Figure 4.32: Non-Medical Practitioners who worked in Intensive Care/High Dependency Unit

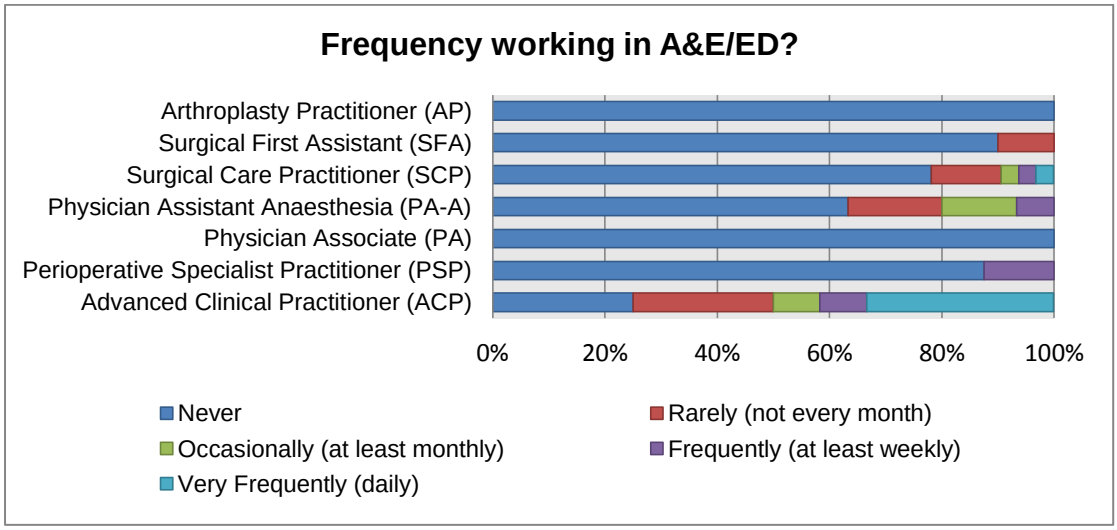


Figure 4.33: Non-Medical Practitioners who worked in Accident and Emergency/Emergency Department

NMPs perceived the role included skills, responsibilities, workload, team working and career progression (Figure 4.34, page 108). For 94% (n=90/96) of NMPs they perceived they had sufficient skills and knowledge to undertake the role confidently. Whilst over 90% perceived the role to be motivating and challenging, yet 76% (n=71/96) perceived the role to be demanding, dealing with difficult situations. 80% (n=77/96) perceived they given enough responsibility, with 56% (n=54) making clinical decisions.

However, 60% (n=57/96) perceived health professionals had displayed initial hostility towards the NMP role, point previously raised in Table 4.7, page 101. When cross-tabulated this hostility was linked to PA-A, SCP, SFA roles all of whom predominately work in the Operating Department. Yet, 70% (n=67) believed the role was respected/valued by other health professionals, notably only 23% (n=22) perceived the role had a clear structure for career progression.

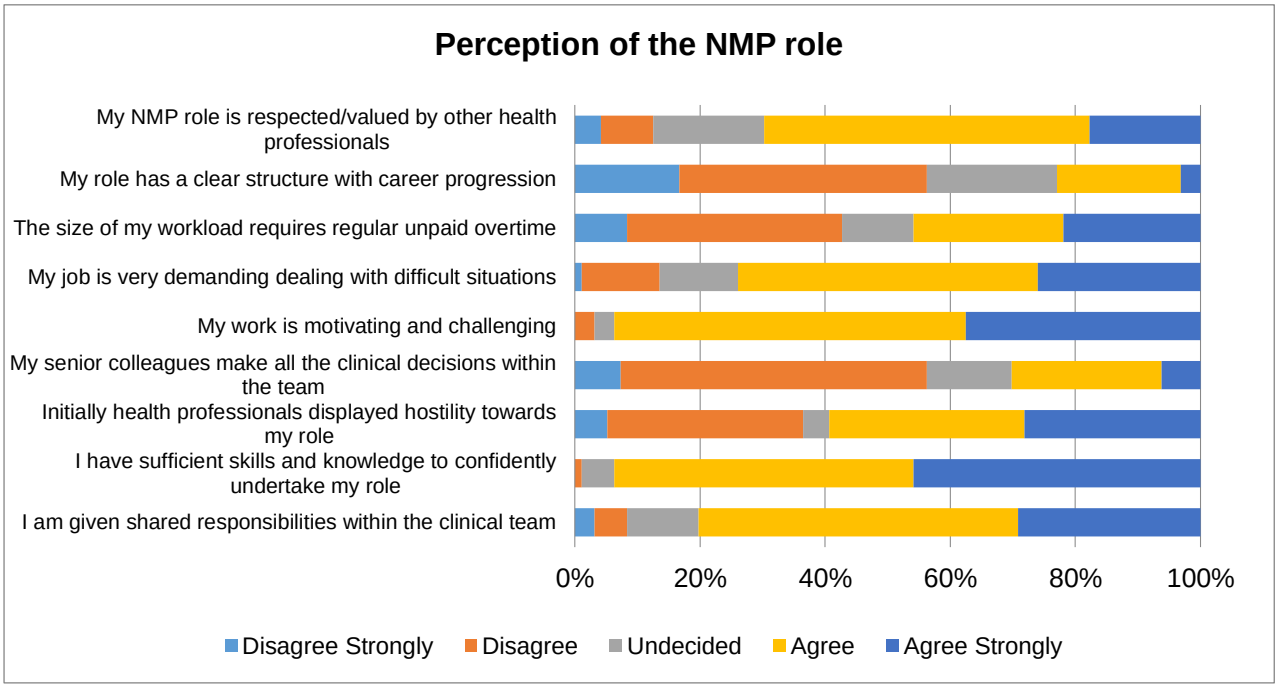


Figure 4.34: Non-Medical Practitioners perception on various aspects of their role

Objective 4: Clinical governance requirements for Non-Medical Practitioner (NMP) role

The fourth objective was to identify the clinical governance requirements for the role since it is important when establishing new working practices to deliver safe patient care. Responding organisations revealed clinical governance frameworks had been developed and embedded for NMP roles in over 78% (n=18/23) of organisations (Figure 4.35). Notably, 35% (n=8/23) of responding organisations undertook a risk assessment prior to commencing NMP roles (Figure 4.36).

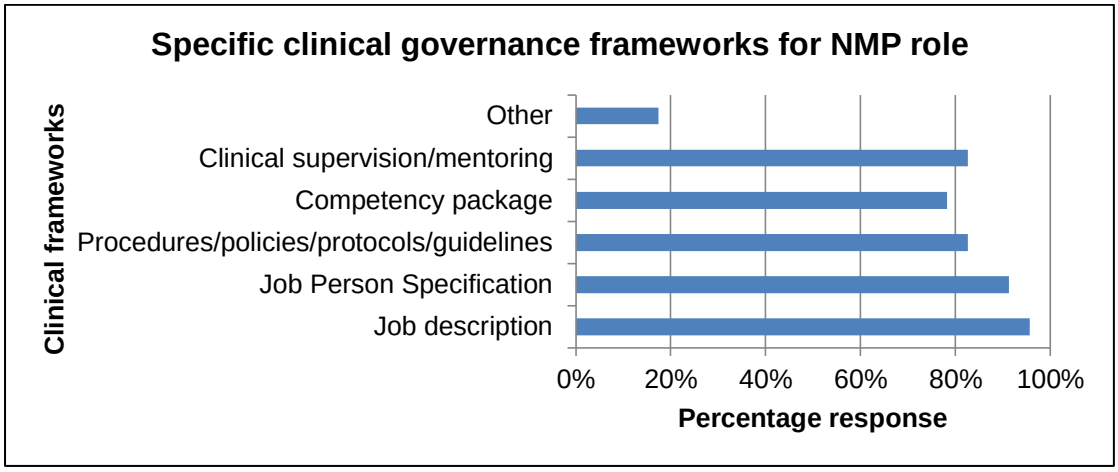


Figure 4.35: Clinical governance frameworks developed specifically for Non-Medical Practitioner roles from an organisational perspective

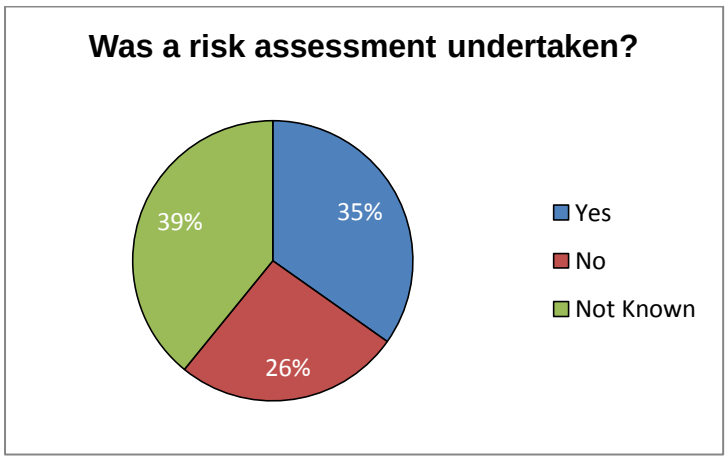


Figure 4.36: Organisations who undertook a risk assessment for Non-Medical Practitioner roles

From a clinical supervision perspective responding organisations reported ACP roles were more likely (n=15) to have a doctor and SFA more likely to have a Modern Matron as a clinical supervisor (Figure 4.37). Whilst responding NMPs reported 87.5% (n=84/96) of NMPs clinical supervision was undertaken by a consultant doctor (Table 4.9).

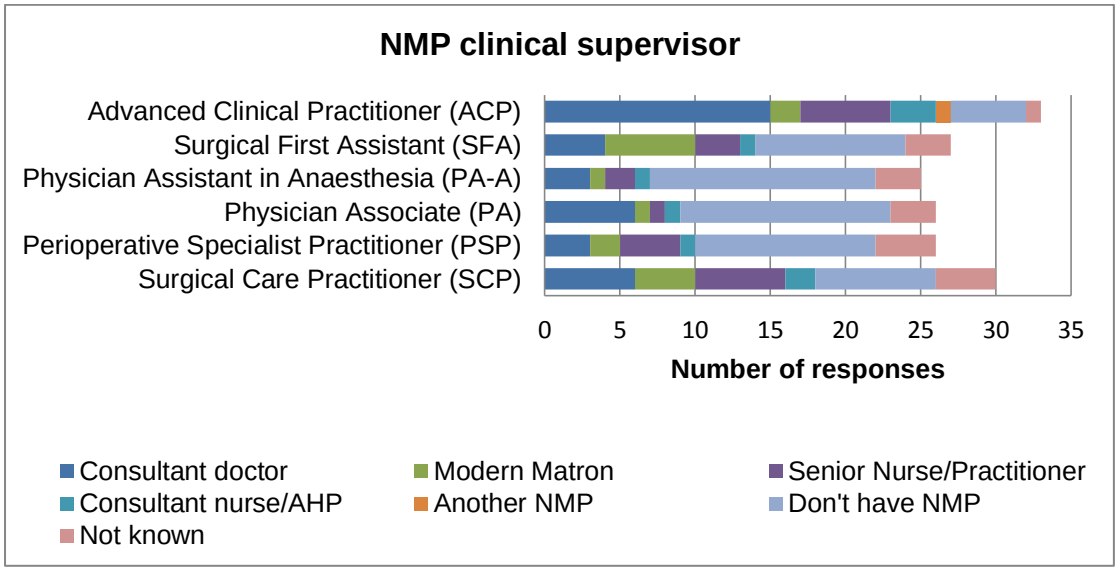


Figure 4.37: Clinical supervisor of Non-Medical Practitioner roles from an organisational perspective

Table 4.9: NMP's clinical supervisor and line manager

Question	Number n=96	Percentage
Your clinical supervisor/mentor?		
Consultant Doctor	84	87.5
Consultant Nurse	1	1
General Practitioner	1	1.5
Theatre Manager	1	1
Non-medical Practitioner	2	2
Do not have a clinical supervisor/mentor	4	4
Registered Nurse	3	3
Professional status of your line manager		
Medically qualified doctor	29	30
Nurse	45	47
Operating Department Practitioner	5	5
Non-clinical manager	8	8
Non-Medical Practitioner	7	7
Another Health Professional	2	2

Line-management provides leadership to roles; the responding organisations reported PA and PA-A roles were more likely to have a doctor as a line manager, whereas the majority of other NMPs were managed by senior nurses (Figure 4.38). Nearly half (47%, n=45/96) of NMP respondents reported their line manager was a nurse, when cross-tabulated nurse line managers were predominantly associated

with ACP, PSP and SCP roles. In contrast, 30% (n=29/96) PA and PA-A roles were line managed by a doctor.

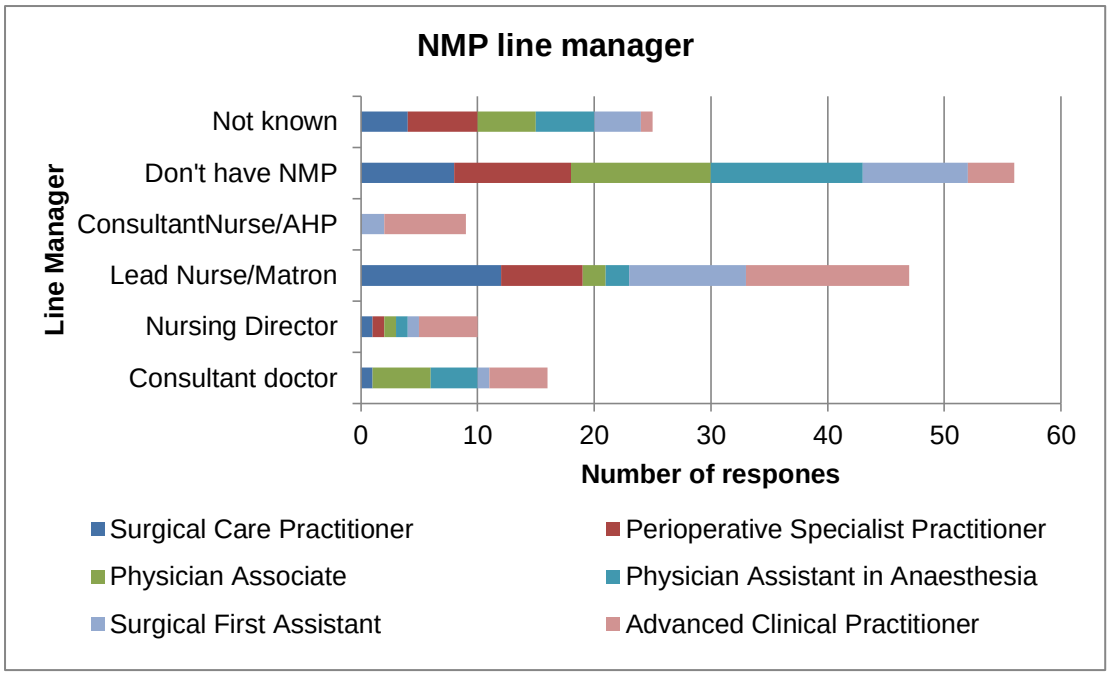


Figure 4.38: Non-Medical Practitioners line manager (organisational response)

For 81% (n=87/96) of NMP respondents there was a perceived clear line management to escalate concerns, however 30% (n=29/96) perceived the NMP role lacked structure within the organisation (Figure 4.39). For 77% (n=74/96) of NMPs their roles were varied, however 24% (n=23/96) perceived their job description did not clearly define their role, whilst 27% (n=26/96) perceived it was not aligned to the AfC pay scale. Notably, 20% (n=19/96) perceived there were no organisational policies/protocols for NMPs.

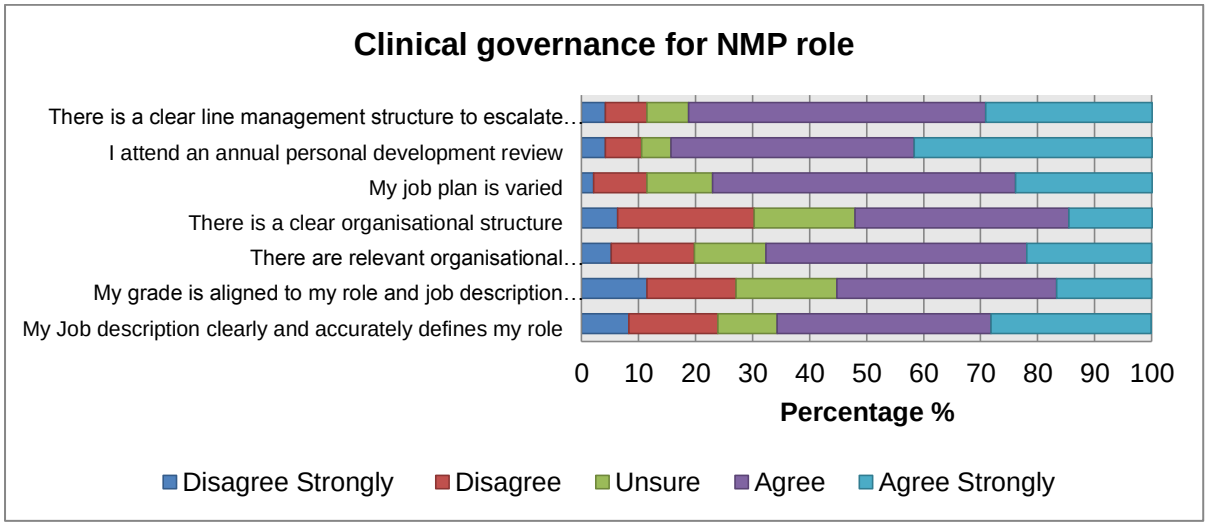


Figure 4.39: Non-Medical Practitioners perception of clinical governance frameworks for their role

NMPs reported the wider aspects of their role and clinical responsibilities (Figure 4.40), with 62.5% (n=60/96) of NMPs reporting having participated to some degree in research/audit. However, when cross-tabulated to individual roles (Figure 4.41, page 113), only the AP frequently undertook research/audit, whilst PAs and SFAs never undertook research/audit. For 71% (n=68/96) of NMPs they rarely/never dealt with complaints/clinical incidents or wrote protocols/policies; whilst 29% (n=27/96) frequently directly managed staff.

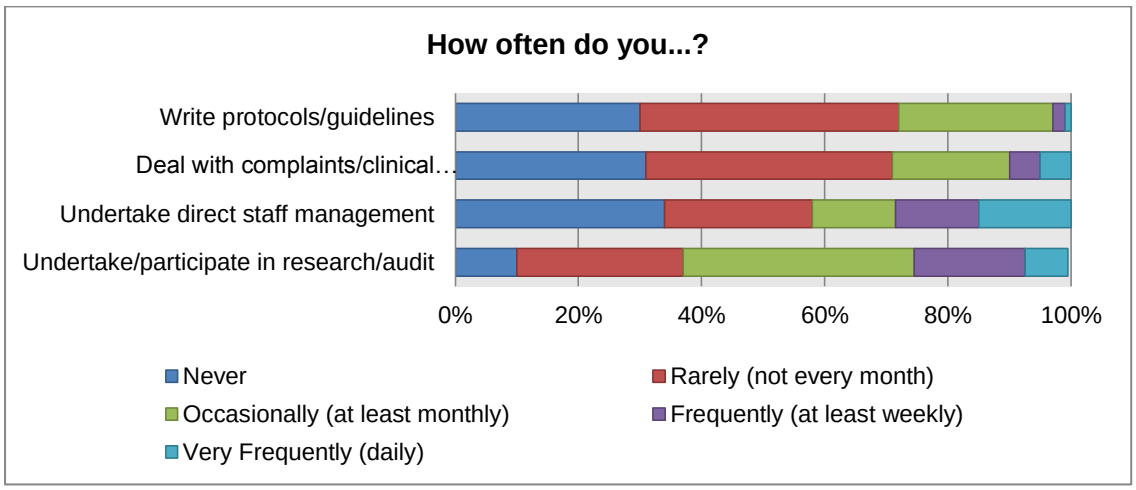


Figure 4.40: Non-Medical Practitioner clinical responsibilities

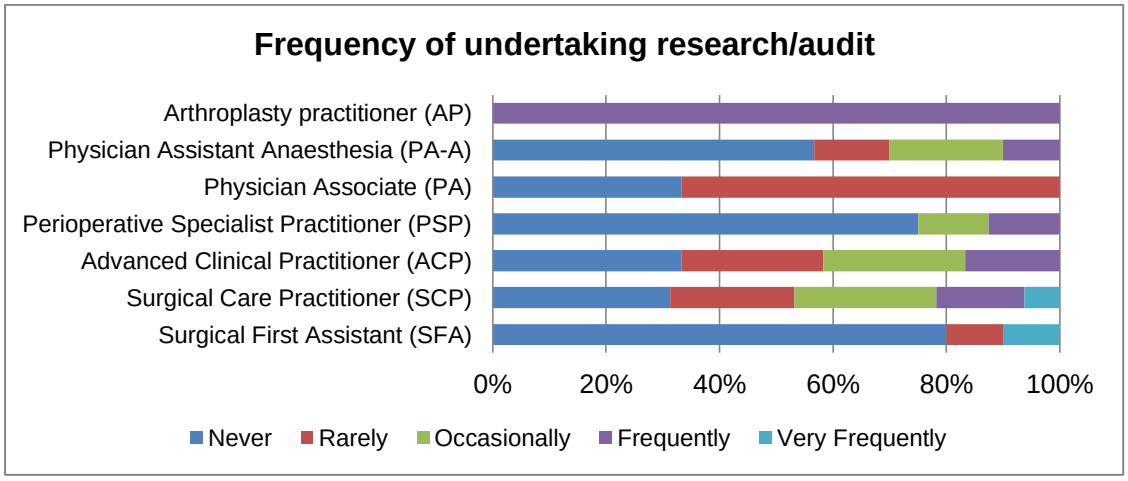


Figure 4.41: Frequency Non-Medical Practitioners undertake research/audit

From a professional regulatory/registration perspective responding NMPs reported nurses commonly undertook SFA, SCP, ACP and PSP roles being regulated by the NMC (Figure 4.42). In contrast, AHP professionals regulated by the HCPC were more likely to undertake AP, PA roles. However, NMPs undertaking PA-A roles were equally split (33%) between NMC, HCPC and the MVR of Royal College of Anaesthetists (RCoA). None of the PA respondents reported being registered on the MVR with the Royal College of Physicians (RCoP).

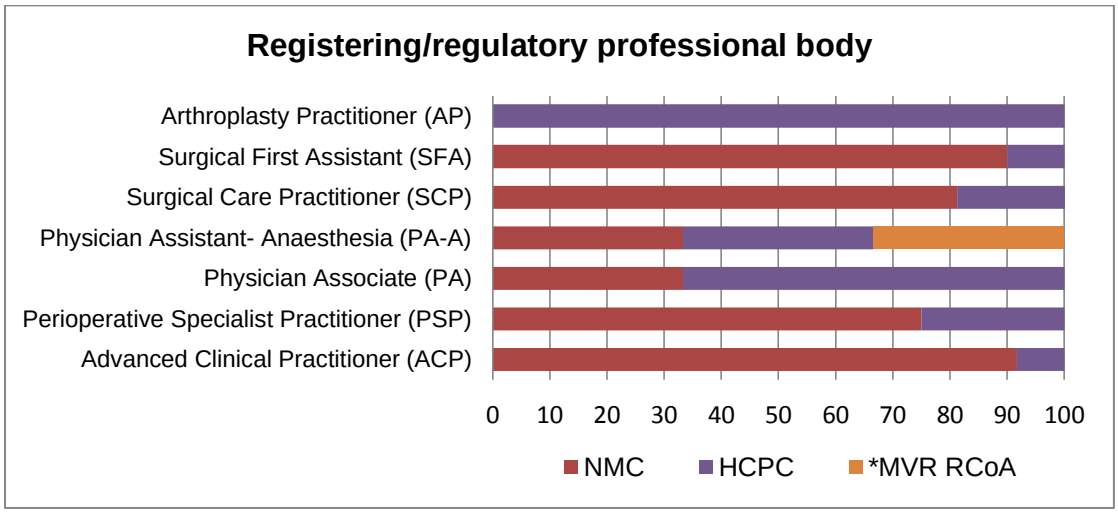


Figure 4.42: Non-Medical Practitioner regulatory/registering professional body

Open-ended questions provided the opportunity for both organisations and NMPs to report challenges or limitations encountered with NMP roles. Responding

organisations reported including difficulties in understanding NMP regulation and scope of practice and receiving support for the role from higher management within the organisation. The increasing number of different NMP titles led two organisations to standardise titles; one chose Advanced Clinical Practitioner, whilst another classified them as Advanced Nurse Practitioners. Several organisations perceived PA recruitment difficult and expensive with limitations which were too restrictive for use in clinical practice (Table 4.10). The NMPs responses are included within the fifth objective, NMPs contribution to healthcare workforce Table 4.13, page120.

Table 4.10 : Organisations perceptions of the challenges or limitations of NMP roles

Challenges or Limitation of NMP role
Encouraging nurse confidence
Difficulty receiving Top-Down support for NMP roles to maximise the potential within the organisation
Difficulty understanding NMP limitations & scope of practice in role, not taking on addition responsibilities when pressured
Requirement for protocols for ordering radiological
Challenges in recruitment
Restrictions due to regulatory limitations
Too many NMP role titles

Additional comments from NMPs respondents are reported which were not identified from previous questions. NMPs believe the number of different titles and training requires more standardisation to assist in clarifying NMP roles. A few NMPs believe regulation and specific registers for NMP roles would provide more recognition from other healthcare professions.

Objective 5: Contribution of Non-Medical Practitioner (NMP) role

The fifth objective of this research study was to identify the perceived contribution of the NMP role from an organisational and NMP perspective. Interestingly, only 13% (n=3/23) of organisations formally evaluated the NMP role,

although 57% (n=13/23) were considering it (Figure 4.43). Qualitative responses indicate organisations were likely to evaluate NMP roles using NHS indicators such as length of patient stay or patient waiting times.

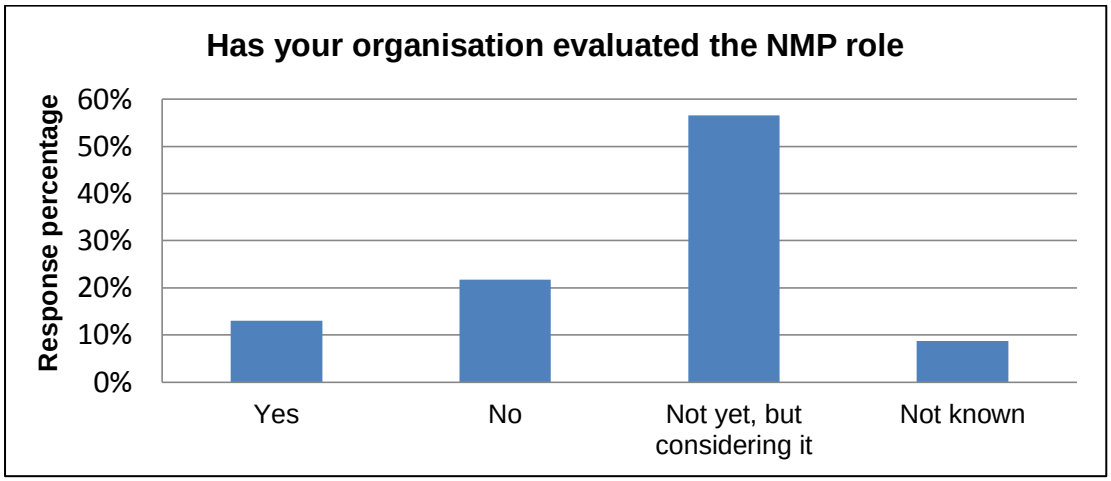


Figure 4.43: Evaluation by organisations of Non-Medical Practitioner roles

Yet, all responding organisations perceived NMPs as a knowledgeable practitioner, who increases the efficiency of the service by providing additional skills, effective decision-making, whilst offering continuity to patient care and consistency to teams (Figure 4.44). Although, 30% (n=7/23) of responding organisations perceived NMP roles were restricted by protocols and clinical supervision 22% (n=5/23). Notably, organisations perceived NMP roles to positively assist other professionals; 83% (n=19/23) believed NMPs supported nurses and AHPs, without negatively affecting junior doctor training. Additionally, 70% (n=16/23) felt NMPs assisted in maintaining safe staffing levels.

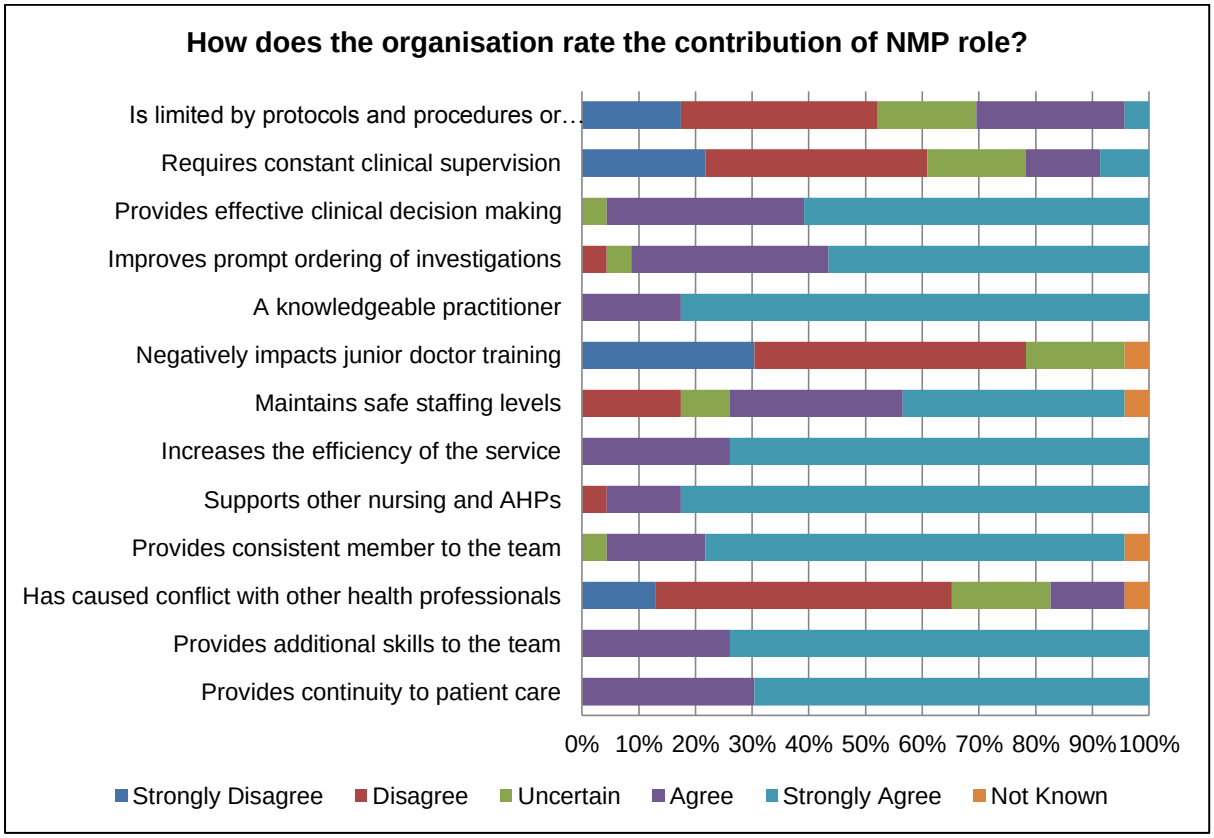


Figure 4.44: Organisation's perception of the contribution of the Non-Medical Practitioner role

Likewise, all NMPs respondents perceived the role provided additional skills to the team; whilst 76% (n=73/96) of NMPs perceived the role filled a skill deficit maintaining staffing levels, providing consistency in the team, and supporting junior doctor training (95%, n=91/96). For 90% (n=86) of NMPs this was perceived to improve patient experience by providing continuity of care and improving service delivery/provision. Over half (56%, n=54/96) NMPs perceived they contributed to clinical decision-making, with only 19% (n=18/96) requiring constant supervision (Figure 4.45). For 94% (n=90/96) of NMPs they perceived the role provided expert clinical knowledge, albeit only PAs reported frequently teaching outside clinical practice (Figure 4.46).

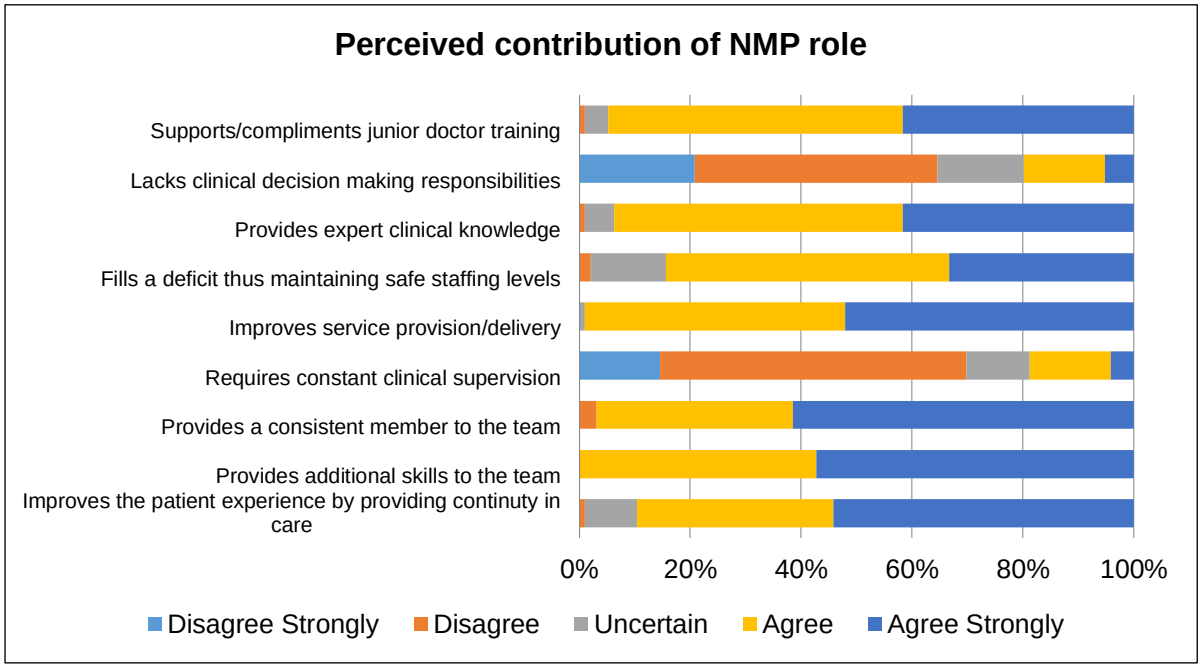


Figure 4.45: Non-Medical Practitioners perceived contribution to the patient and organisation

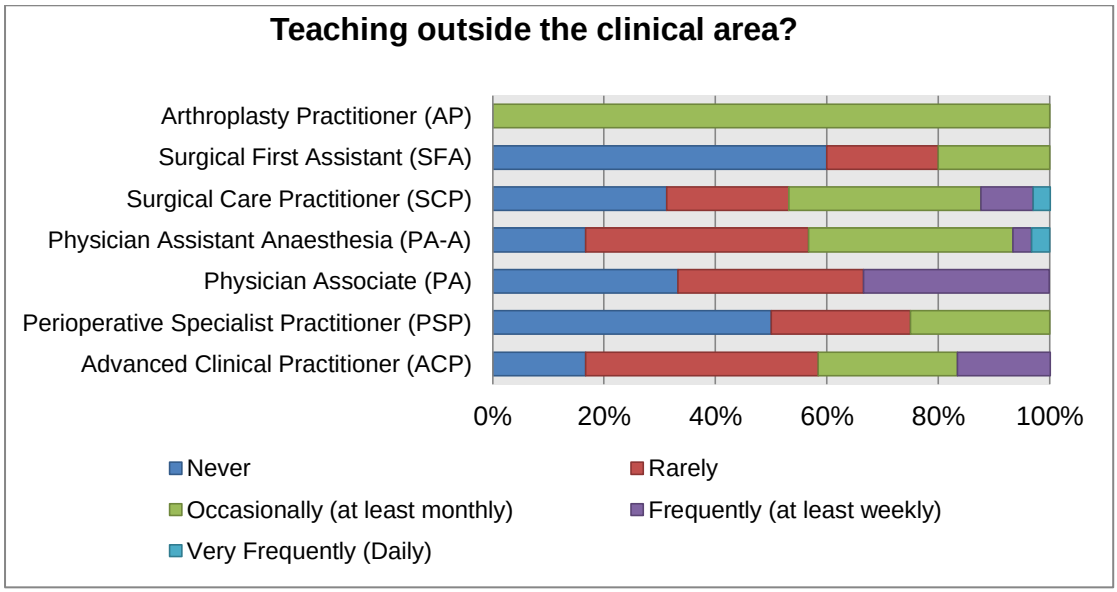


Figure 4.46: Frequency of Non-Medical Practitioners teaching outside the clinical area

Organisations provided comments on the perceived benefits of NMP. Organisations perceived NMPs enhanced patient care thus leading to better patient outcomes and encouraged NMPs clinical leadership within a clinical career pathway. A few examples of organisational responses are provided in Table 4.11.

Table 4.11: Organisations perceived benefits of Non-Medical Practitioner (NMP) roles

Benefits of NMP Role
Provides consistency to team/organisation
Clinical leadership
Career pathway
Job satisfaction
Enhances patient experience
Adds value to the service
Improves staff experience
Improves patient outcomes
Improves efficiency of the service
Supports junior doctor learning

To determine the extent of integration and contribution of the NMP role within the organisation, NMPs were invited to report their perception of the NMP role within their organisation (Table 4.12). In total, 126 statements were identified; six main themes emerged, although four were considered more dominant. Half (n=63) the NMPs statements perceived their role was valued and respected, contributing knowledge and additional skills to the team. In contrast, 24 statements perceived the NMP role was undervalued using statements such as “working donkey” and a “tool” implying a degree of frustration and exhaustion, with several highlighting the under-utilisation of their skills. Additionally, some NMPs expressed a lack of acceptance and hostility being displayed by other health professionals using terms such as “not welcomed” and “bad feeling”. Whilst other NMPs perceived health professionals lacked an understanding of NMP roles, skills and scope.

Table 4.12: Non-Medical Practitioner's perception of their role within the organisation

Comment Examples	Number of Statements	Sub-themes	Themes
Facilitate team working Additional team member Appreciated Respected Beneficial Useful Complementary skills Highly regarded Additional skills Valued by senior staff Welcomed addition to team Wanted in team Well received Knowledgeable	63	Valued Skilled additional team member Appreciated Knowledgeable	Knowledgeable and skilled team member
Uncertain/unsure/unknown Undervalued Lack of recognition/respect "Working donkey" "Surgical Slave" "Tool" Under-utilisation of skills	24	Undervalued lacking recognition and respect Under-utilisation of skills	Undervalued and under-utilised
Lack of awareness of role scope and skills Misconception of role Lacked understanding of role	15	Lack of understanding of role and skills	Lack of understanding of NMP roles
Not welcomed by junior staff "bad feeling", "not welcomed" Fear Hostility Threats to medical staff training	15	Threat to existing roles Lack of acceptance Competition for duties	Lack of acceptance
Fill gaps Required for service delivery Guaranteed skill mix Future workforce Extra pair of hands Assistant Enhances patient care "Get things done"	9	Developing new ways of working to improve service delivery and patient care	Improve the patient service
Cost saving	1	Cost saving	Financial benefit to the organisation

Additionally, NMP respondents also reported their perceived limitations or challenges of the NMP role (Table 4.13). Overall fewer statements were obtained (n=31); the most common (n=22) perceived challenges were restrictions within clinical practice such as the lack of understanding, acceptance and clinical autonomy alongside regulatory and clinical governance restrictions, which limited full utilisation of the role. A few perceived there was a lack of structure and career progression for the NMP roles.

Table 4.13: Non-Medical Practitioner's perceived limitations/challenges of the NMP role

Limitations and Challenges (Example of extracts phrases/paraphrases)	Number of Statements	Sub-themes	Themes
Lack of understanding Limited to one clinical area/lacked variety Requirement of supervision Lack of clinical autonomy Lack of numbers of NMP role Inability to expand role High workload Insufficient NMP roles Fire Fighting	9	Restrictions in clinical practice	Restrictions within clinical practice
Resistance to change Threat to other roles Medical staff feeling threatened Nursing staff dismissive to career pathway Lack of understanding by managers re NMP role Lack of management knowledge and support Lack of understanding differences between NMP roles	7	Lack of acceptance of NMP role Lack of understanding of NMP roles	
Lack of statutory regulatory registration Lack powers to prescribe Lack of policies and job descriptions Guidelines to practice Being asked to go beyond ability/guidelines	6	Lack of clinical governance/regulation	
Lack of career progression Lack of career structure New role	5	No career structure for progression	

Limitations and Challenges (Example of extracts phrases/paraphrases)	Number of Statements	Sub-themes	Themes
Lack of vision No Job plan			
Funding No educational funding	**3**	Financial	
No formal evaluation of NMP role	**1**	Lack of formal evaluation of role	

Objective 6: Educational requirements for Non-Medical Practitioner (NMP) roles

The final objective was to ascertain the educational requirements for the NMP role. Education is an important aspect of clinical governance and professional revalidation to ensure patient safety. In Study A (organisations), all but one responding organisation agreed University based education was important for NMP roles (Figure 4.47), although only 65% (n=15/23) of organisations had an educational budget for NMP training (Figure 4.48, page 122). Despite this, 83% (n=19/23) of organisations provided NMPs with the opportunity to undertake recognised educational programmes (Figure 4.49, page 122). Responding organisations also highlighted, in qualitative comments, difficulties accessing educational funding for NMP roles. Advancing Practice courses were funded by 50% (n=20/40) of organisations, in contrast to 7.5% (n=3/40) of research based programmes (Figure 4.50, page 122).

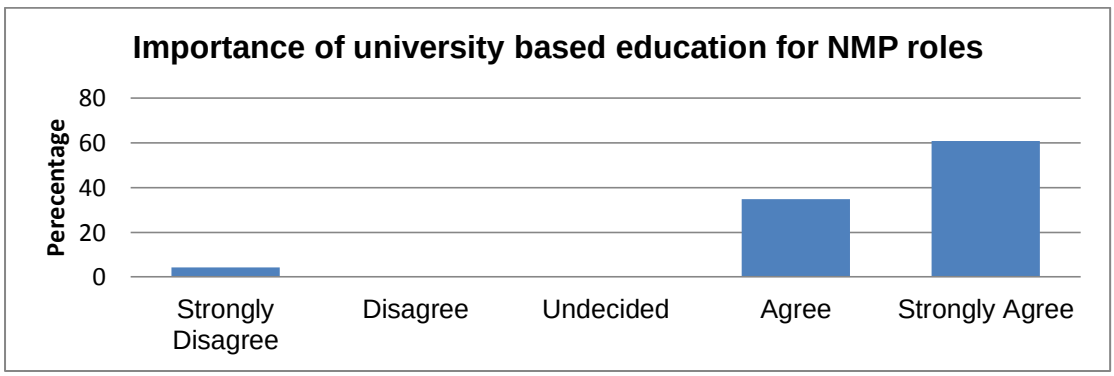


Figure 4.47: Importance of university based education for Non-Medical Practitioners

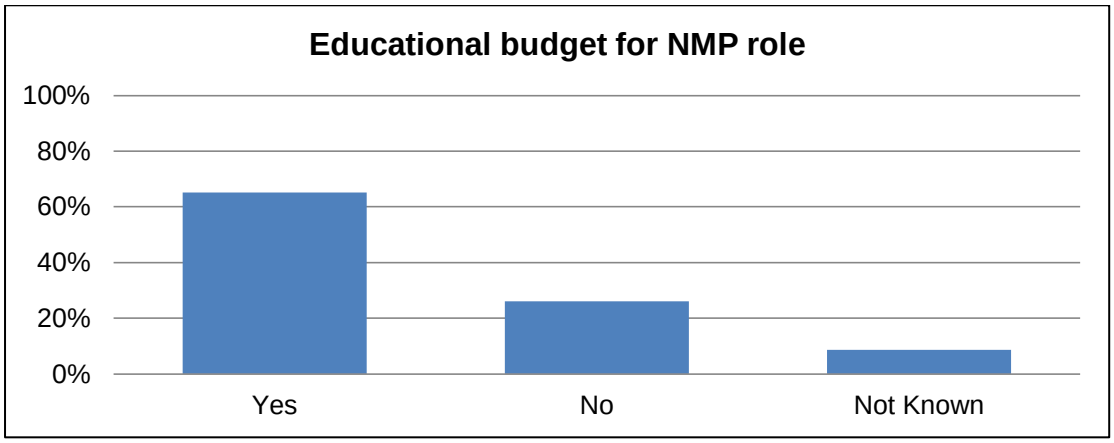


Figure 4.48: Organisational budget identified for Non-Medical Practitioners

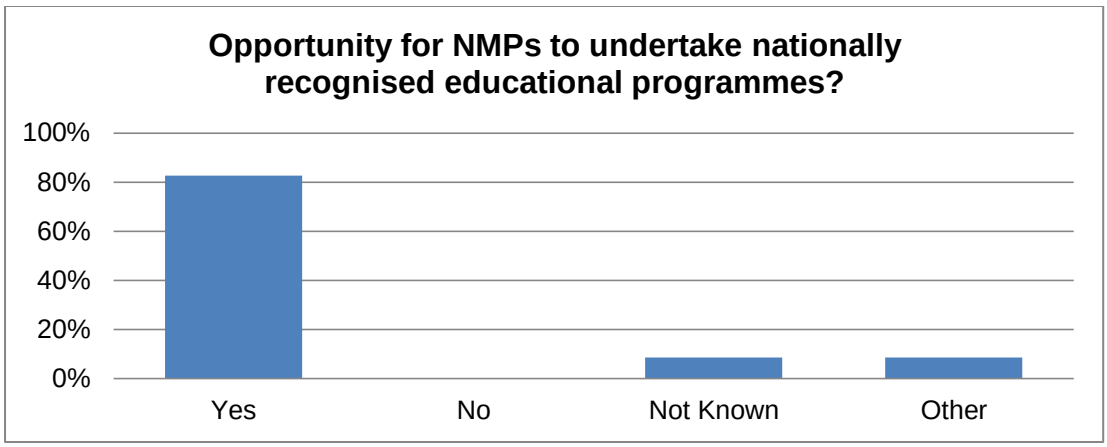


Figure 4.49: Opportunity for NMPs to undertake nationally recognised educational programmes

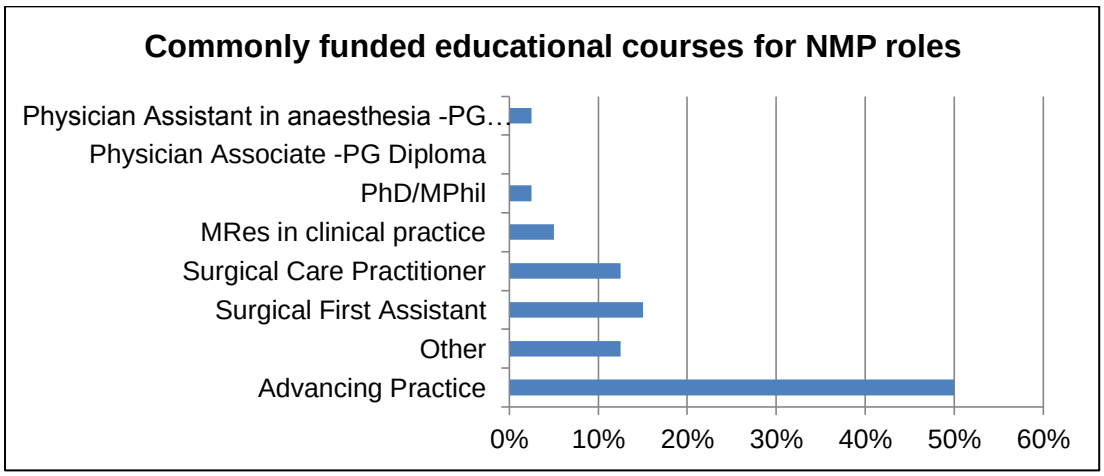


Figure 4.50: Educational courses funded for Non-Medical Practitioners

In Study B, the NMP respondents reported variation in the level of academic qualifications attained (Table 4.14); 91% (n=87/96) of practitioners were educated to

degree level or above, of which 34% (n=33/96) had attained a Masters and 2% (n=2/96) a PhD/MPhil.

Table 4.14: Description of Non-Medical Practitioner educational background

Variable	Number	Percentage %
Highest educational qualification	**n=96**	
PhD/MPhil	2	2
MSc/MA/MRes	33	34
Post Graduate Diploma	26	27
Post Graduate Certificate	4	4
BSc/BA	22	23
Undergraduate Diploma	6	6
Registered ODP (NVQ)	1	1
Registered General Nurse-Certificate	2	2
Completion of nationally recognised NMP educational programme	**n=96**	
Yes	65	68
No	9	9
Currently undertaking	22	23
Nationally recognised specialist qualification	**n=87**	
Advanced Nurse Practice (ANP)	4	5
Advanced Clinical Practitioner (ACP)	4	5
Perioperative Specialist Practitioner (PSP)	2	2
Physician assistant in Anaesthesia (PA-A)	29	33
Physician Associate (PA)	2	2
Surgical Care Practitioner (BSc)	10	11
Surgical Care Practitioner (MSc)	15	17
Surgical First Assistant/Advanced Scrub Practitioner	16	18
Other	5	6

Nationally recognised qualifications had been undertaken by 68% (n=65/96) of NMP respondents; the PA-A was the most common specialist qualification (33%, n=29/87), whilst 29% (n=25/87) were/had undertaken a SCP qualification. From the 87 who had/were undertaking a nationally recognised specialist qualification, with one exception, a Registered Nurse First Assistant who trained in USA, the remaining 86 undertook courses within Higher Educational Institutions (HEI) in England, Scotland and Wales. Figure 4.51 illustrates the HEIs providers where NMP

respondents had attended, with the Midlands region having the highest NMP attendances for nationally recognised specialist educational courses (43%, n=37/86).

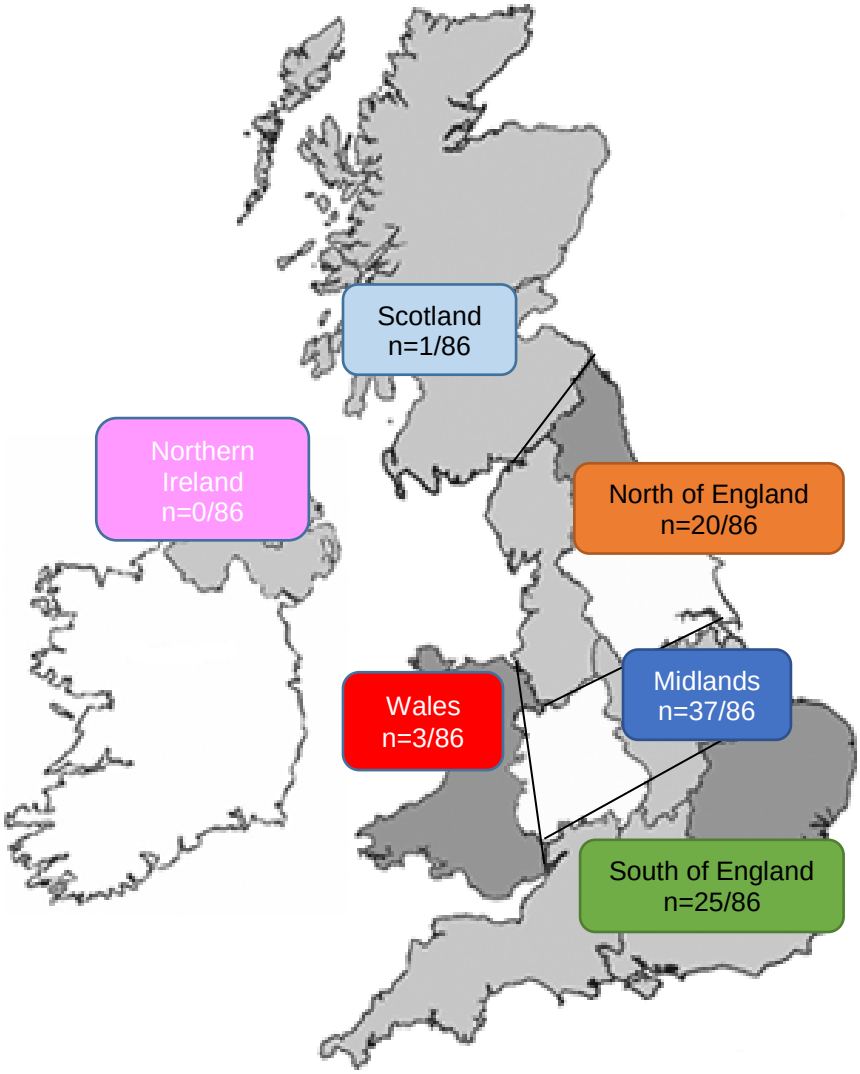


Figure 4.51: Geographical distribution of Higher Educational Institutions which provided nationally recognised courses for Non-Medical Practitioners in the UK

A third (n=29/87) of NMPs respondents perceived they had the experience, skills and qualifications prior to commencing their role. All NMPs perceived education and training was required, although 44% (n=38/87) found academic studies more challenging than expected. For 86% (n=75/87) of NMPs opportunities to attain skills, along with clinical supervision were provided, although 33% (n=29/87) perceived there was no clear annual training plan for NMPs (Figure 4.52).

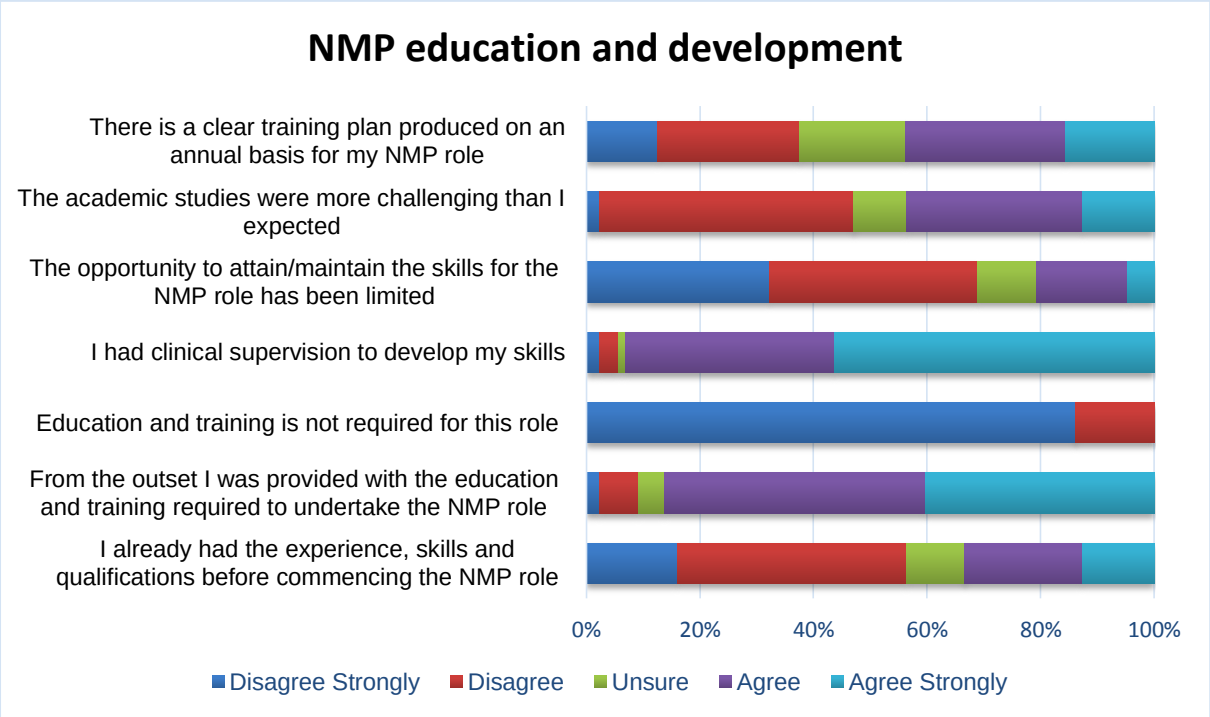


Figure 4.52: Non-Medical Practitioner perception of their education and development

Summary of results

The organisational (Study A) response rate was low (12%), so these results should be viewed as exploratory. Large sized organisations appeared under represented, as was the North East of England. The majority of the NMP roles are employed in the NHS, distributed nationally and established after 2001. Results from both responding organisations and NMPs perceived the NMP role was employed NMPs in response to service needs and workforce developments. Nursing directors or managers were more likely to have led the development of the NMP role.

NMP roles were equally split between medical and nursing workforces. Two-thirds were undertaken by nurses; although AHPs were more likely to undertake AP, PA or PA-A roles. NMPs had many years of experience before undertaking the NMP role, identifying recruitment as career progression whilst remaining clinical. These roles worked throughout the week but the majority of NMPs worked Monday-Friday, within a variety of clinical settings and clinical specialities; ACP, PSP and SCP

worked in multiple clinical settings. NMP roles were clinically focused; only PAs occasionally worked outside clinical practice teaching, with few frequently undertaking leadership responsibilities.

Additionally, NMPs AfC grading varied widely, Bands 5-8d, but were likely to start as a trainee on AfC 6/7 and progress to 7/8a after completing a training programme; higher grades were employed in South of England. NMPs were given educational opportunities by organisations, yet only 36% had attained a master's level or higher qualification. Yet, from an organisational perspective ACPs were expected to have attained a postgraduate or specialist qualification at recruitment. Organisations were more likely to recruit ACPs and fund Advance Practice courses, although specific educational budgets were limited for NMP roles.

Clinical governance frameworks and supervision were embedded by organisations. Clinical supervision was commonly provided by doctors, whereas line management was divided between nursing and medical staff. Nurses were more likely to be line-managers for NMPs, with the exception of PA and PA-As who were commonly had a doctor. Just over two-thirds of NMPs believed they had protocols and guidelines for the NMP role and 87% received clinical supervision for their roles.

Few organisations formally evaluated NMP roles, although organisations positively perceived the NMP as being a knowledgeable practitioner, which improved patient outcomes and increased service efficiency. Similarly, NMPs perceived their role contributed to the organisation, service and patient journey and was valued, although some NMPs perceived their role was undervalued/utilised.

Several challenges were reported with supporting the role, recruitment, the variety of titles and regulatory limitations. NMPs perceived there was a lack of

understanding of NMP roles especially by junior staff, students and patients. Results indicate NMPs use limited communication strategies to improve the awareness of their role and reported experiencing initial difficulties with acceptance from other health professionals. Uncertainty remains as to the replacement of the NMP role if it became vacant.

Overall Summary

This chapter has presented the results of the organisational (Study A) and NMP (Study B) surveys. Open-ended questions yielded exploratory qualitative data to discover why practitioners undertook the role, their perceptions of the role, its developments and integration, challenges and factors which would facilitate the introduction of NMP roles. The qualitative data was coded, thematically analysed and presented. A discussion and interpretation of these results will follow in Chapter 5.

Chapter 5 : Discussion, limitations, recommendations and conclusion

This chapter will interpret and draw together the key results from Study A, the organisations in England (n=23) and Study B, the NMP surveys from the UK (n=96), as previously reported in Chapter 4. For clarity, the original study objectives in Figure 5.1 will be used as sub-headings for this chapter. The remaining sections focus on limitations (page 148) and implications for clinical practice, education and policy (page 150), recommendations for further research (page 152), and lastly the overall conclusion.

Figure 5.1: Research study aim and objectives

Discussion and interpretation of results

NMP roles and the regional distribution of these roles

The first study objective was to identify NMP roles and ascertain their regional distribution within the UK. Drawing on the evidence in Chapter 2 this is the first study to shed light on the national range, distribution and regional differences in NMP roles in the UK. Chapter 4 identified small numbers of NMPs reported in Scotland (3/96), Northern Ireland (1/96) and Wales (4/96), whilst the Midlands region of England had greater numbers (36/96), indicating regional inconsistencies in the development of the NMP role. Variations may be attributable to local service provision such as HEI NMP courses, discussed further on page 146.

From an organisational perspective, the North East of England was not represented, yet 25% (n=24/96) of NMPs reported working within this region. Large organisations were under-represented (n=3/23), which may reflect the difficulties of retrieving workforce information as NMPs are incorporated within both medical and nursing workforce structures. Difficulties in retrieving NMP information from organisations was also experienced when Miller, Cox and William's (2009) explored Advanced Practitioner roles.

Previous studies in Chapter 2, examined PA-A, PA, SCP and PSP roles (Table 2.1, page 17). However, no previous study has explored the breakdown of NMP roles which currently exist in the UK. This study identified seven NMP roles; three roles (AP, ACP and SFA) have not been previously researched. The emergence of these new roles implies the workforce is still changing, and that these roles are considered novel and innovative but are not yet embedded. With the exception of the AP role all titles are recognised with an educational curriculum

framework. The majority (n=93/96) of NMPs were employed by the NHS, which is not surprising given the majority of acute healthcare is provided by the NHS in the UK. Interestingly, only 11/96 NMPs indicated being employed by teaching hospitals, in contrast to Gokani et al. (2016) study previously reported (Table 2.4, page 23) which indicated the majority were employed in teaching hospitals. Consequently, the differing titles and diversity of NMP roles within the workforce may be indicative of the need for flexibility. The identification of these NMP roles provides evidence to support healthcare workforce planning, education and evaluation.

NMP respondents perceived there was a lack of understanding surrounding NMP roles by health professionals. Senior doctors (consultants and registrars) and senior nurses were perceived to have a better understanding, potentially being involved with the development, clinical supervision or line management of NMP roles. However, NMPs perceived junior staff especially students (Figure 4.20, page 98) to have little understanding of NMP roles. These findings are similar to other studies (see Chapter 2) indicating a lack of understanding and uncertainty in relation to scope of practice and role boundaries. This is explored further in relation to objective 3 on page 137.

NMPs in this study also perceived patients (Figure 4.21, page 99) had little or no understanding of the nature of NMP roles, confirming previous research which examined patients' understanding of health-professional titles in Chapter 2 (Table 2.4, page 23). This poor understanding could be due to the lack of information regarding NMP roles provided, yet few studies have sought the patient's views regarding new roles or the information provided to explain them. Interestingly, this study found NMPs had difficulty in communicating and describing their role; the

researcher considered this a novel finding. Verbal communication was most commonly used; over half used their title or their name badges to describe their role. However, Farah and Heaton's (2013) small descriptive survey (n=52) of parents of patients found doctors wearing name badges were considered useful, however name badges did not improve patient understanding due to complex and abbreviated titles. Hence badges and titles may provide patients with limited understanding of the NMP role and alternative communication strategies should be considered by NMPs to more effectively inform others about their role.

Factors influencing the development and recruitment of Non-Medical Practitioner (NMP) roles

The second objective explored the development and recruitment of NMP roles in acute care within the UK. Respondents perceived NMP roles were developed predominately in response to service needs and workforce developments such as reduction in the number of doctors from the deaneries. These results differ from previous studies discussed in Chapter 2, which suggested NMP roles were driven by national policies such as EWTD which reduced doctors working hours from 56-48hours/week in August 2009, thus limiting the medical cover available in clinical practice. Notably, no previous study was found which specifically examined the employment of NMPs and policy developments, again highlighting new findings.

However, further detailed analysis of present study findings indicates a potential link between employment and national policy (Figure 4.15, page 92). NMPs were steadily employed from 2001 following the publication of the NHS Plan (DH 2000) and the trajectory continued following various policy directives, such as the

piloting of extended practitioner roles in line with Modernisation Agency (DH 2001) and later changes in junior doctors working hours, effective from August 2009. Findings also indicate a decline in NMP recruitment in 2012. Even though major trauma centres were established in 2012, it is postulated that the publication of the Health and Social Care Act (DH 2012a), which radically changed the structure of commissioning and monitoring services, caused uncertainty within organisations and interruption to recruitment. Therefore, these results are the first to show a trend of developing NMP roles in line with national policy and the impact of that on workforce delivery.

Responding organisations in this study reported the development of NMP roles was led by nursing/educational directors or managers (54.5%, n=36/66). This result sits in contrast to the literature previously discussed, which reported doctors leading the introduction of NMP roles (RCSEng 2016; Miller, Cox and Williams 2009; Smith, Kane and Milne 2006). Qualitative comments from this study suggest NMP's perceive that the person leading the development should be clinical, motivated with active qualities, indicative of a transformational leader. According to Morgan (2005) a transformational leader has a passionate belief in changing behaviours at an employee level to develop and achieve whilst directing the organisational vision. This concurs with Kneebone et al. (2006a) study which also suggested "active" leadership was required to develop and sustain the role. Therefore, this finding is important not only to successfully develop and implement the role but for sustaining the longevity of NMP roles in delivering patient care.

From a recruitment perspective, this study found (Table 4.4, page 90) NMPs were predominantly female nurses. Nevertheless, an interesting result, was the

representation of men, which was higher than expected; 31% (n=30/96), since currently men represent approximately 11% of the nursing workforce (NHSHEE nd) and 23% of the overall NHS workforce (NHS Employers 2016). Nationally, 29% of men achieve AfC Band 8a-9 (NHS Employers 2016); therefore, this study's results may in part be explainable by the higher AfC banding offered to NMP roles, although as discussed below, banding is inconsistent. None of the reviewed literature examined gender and therefore this observed over-representation of males in NMP roles is considered a notable and novel finding.

Respondents from this study reported a wide variation in AfC pay banding ranging from 5-8d for NMPs; 51% (n=49/96) were employed at clinical Band 7 and 31% (n=30/96) at Band 8a. Although organisational results differed; they more consistently reported trainee positions were Bands 6/7, achieving 7/8a after successfully completing qualifications. Employing NMPs on lower Bands maybe associated with the financial constraints within organisations, although this tiered approach provides NMPs time to develop skills, competence and confidence to work at an extended/advanced level. Commencing NMPs in trainee positions at a lower banding is congruent with White and Round (2013) recommendations which stated PA roles should initially be Band 6, with progression to Band 7 after 12 months. The variation in NMPs banding highlights a discrepancy between banding in clinical practice and the regional frameworks, which recommend a higher tiered banding; Band 7-8 (NHSHEE 2014; 2015). Additionally, nearly a quarter of NMPs in this study perceived their job descriptions and AfC pay banding were not aligned, which suggests NMPs and their roles had evolved beyond their original scope. However, this also suggests NMP roles lack effective job planning reviews. Variation with pay-

grading within this study are likely to be related to many factors such as the variety of different roles, the degree of planning and evolution of the role, its title, level of supervision and whether the role is considered an extended, advanced or new. Furthermore, the wide variation in pay banding may also reflect the financial constraints organisations are currently facing within the UK.

Nonetheless, the importance of AfC banding cannot be underestimated, as inequality in pay can potentially lead to retention difficulties and was raised within the qualitative comments within this study. This result concurs with Miller, Cox and Williams (2009) who reported practitioners being “poached” by other organisations from study case sites. Retention is a legitimate concern for organisations, since it takes approximately three years to educate NMPs at a significant financial cost. Therefore, organisations should carefully consider banding at the outset, following published frameworks, regularly reviewing the role and the practitioner’s skills and scope of practice as the service develops.

Results from this study found NMPs had many years’ experience, 82% (n=79/96) had over five years’ experience, whilst 21% (n=20/96) had over 20 years; with 26% (n=6/23) of organisations requiring five years or more experience when recruiting NMP roles. Therefore indicating experienced practitioners use these roles to progress their career; and this study found NMPs applied for these roles to progress in banding, yet remain clinical rather than choosing a managerial route. The recruitment of experienced practitioners is consistent with the introduction of other new roles such as ENPs (Fotheringham, Dickie and Cooper 2011) but is a new result from this study, to add to the literature in this field.

As previously mentioned, NMP roles were commonly undertaken by registered nurses. Literature reviewed in Chapter 1 raised concerns that NMP roles would further deplete the nursing workforce of highly skilled staff (Gokani et al. 2016; RCSEng 2016). This is a valid concern given the 7% deficit in acute nursing (Baker 2016) and the reduction of nursing students (National Audit Office 2016) which may potentially be further exacerbated by changes to nurse funding later in 2017 (Hurst 2016). However, NMPs in this study welcomed the challenge of undertaking the NMP role; some wanted extra responsibility and autonomy, whilst further extending their knowledge and skills. These results concur with previous studies discussed in Chapter 2 (Smith, Kane and Milne 2006; Quick 2013). Therefore it could be argued that recruiting nurses to NMP roles should be viewed positively, as an opportunity to retain nurses. These roles provide the opportunity for nurses to continue using and further developing skills to benefit patients by providing a link between nursing and medical staff. Previously nursing career development was primarily limited to management, education or research (Montague and Herbert 1982). Therefore, NMP roles can assist in retaining experienced staff by developing new skills, whilst providing clinical career progression.

The integration of NMP roles into acute healthcare

The third objective of this study was to determine how NMP roles had been integrated within acute healthcare. NMPs reported working within a wide variety of clinical specialities, the most common being General Surgery (35%), Anaesthetics (33%) and Orthopaedics (29%). Whilst this concurs with previous published literature which examined individual roles, discussed previously in Chapter 1 and 2, this is the

first study to clearly demonstrate which clinical specialities incorporate NMPs in acute healthcare from a national perspective.

Furthermore, this study suggests NMP roles were integrated into organisations differently. For example, three NMP roles worked in specific clinical settings; SFAs and PA-As worked predominantly in the operating department, whilst the AP worked exclusively in out-patient clinics. These roles are very specialist, as previously outlined in Appendix 1; this may indicate SFA, PA-A and AP roles were driven by a deficit in the service. For example, in assisting the Consultant Surgeon, providing anaesthesia or improving outcomes for joint replacements, resulting in recruiting NMPs with specific skills to fulfil service requirements. These results concur with previous studies discussed in Chapter 2, which suggested NMP roles were being used to support services due to a reduction in doctors from the EWTD. However, it could be argued that the integration of AP, SFA, PA and PA-A roles using this approach is more task/target driven, and may not therefore fulfil the advanced practice framework, but rather that of an extended role. Again this is similar to the development of the ENP role, where the role has gradually incorporated advanced practice components to effectively diagnose and manage episodes of patient care.

Conversely, SCP, PSP and ACP roles within this study reported the most versatility; working on wards, in clinics, and sometimes attending operating departments. These findings are consistent with two previous studies discussed in Chapter 1 (RCSEng 2016) and Chapter 2 (Gokani et al. 2016) which discussed SCPs supporting doctors on the wards, in clinic and the operating department. Although, the SCP, PSP and ACP roles could also have been introduced in

response to specific service needs such as improving ward discharges, running of theatre and clinics; however integration appears to follow the patient journey being "patient focused or clinical care" based, taking a more team approach. These results indicate that SCPs, PSPs and ACPs can provide a flexible practitioner who has the skills to work in several clinical settings.

Surprisingly, over 90% of NMPs worked Monday-Friday (8-4pm/9-5pm) with approximately a third working weekends. This result contrasts White and Round (2013) study which reported PAs working all day, 8.30am-9pm, shift patterns. Results from this study also highlighted that Monday-Friday rota system suggests many NMPs are delivering elective care. Only three studies (Farmer et al. 2011; White and Round 2013; Williams and Ritsema 2014) discussed in Chapter 2 clearly acknowledged PAs working in emergency care. Qualitative findings from NMPs in this study suggested the need for more variety and utilisation of skills. Given the ongoing NHS financial difficulties especially incurred with a shortage of doctors and the increasing impact emergency care has on acute healthcare; incorporating weekends and on-call rotas could provide the opportunity to add variety, further expanding their skills and consequently more fully utilising the NMP role.

Results also showed over half of NMPs perceived they had initially experienced difficulties being accepted by other professionals, albeit the majority reported acceptance improved with time; although no specific time period was quantified. Interestingly, NMPs who worked predominantly in the operating department perceived more hostility. Similarly qualitative findings support this lack of acceptance with comments such as "not welcomed". These findings could be related to several factors. Firstly, non-acceptance has been associated with a lack of

understanding of the NMP role in several studies discussed in Chapter 2, which reported a lack of role clarity, alongside the threat of encroachment on existing role boundaries. A fear of encroachment of existing roles is considered a valid concern and is not limited to perioperative practice. Comparable frustrations on overlapping roles have been mirrored in primary care between NPs and PA roles in the UK (While 2015) and with new role development internationally (Sangster-Gormley, Martin-Misener and Burge's 2013). In the early stages of SCP role development junior doctors expressed concerns that medical training would be negatively affected (Moorthy et al. 2006). However, this study's results suggest NMPs support junior doctor training, therefore refuting these earlier claims, which concurs with Gokani et al. (2016) and RCSEng (2016).

Secondly, the change management strategies used during the development and integration of NMP roles can influence acceptance. For change to be successful and sustained, it needs to be carefully planned and implemented preferably using a model (Gopee and Galloway 2017). As this study did not explore in detail the change management associated with the implementation of NMP roles discussion is limited, yet is worthy of mention. Organisational results indicate the majority (n=19/23,83%) of organisations in this study took a planned approach to developing the NMP role, recognising a need for change in developing NMP roles since business cases had be developed to support the NMP role. Change management models also recommend actively involving stakeholders in preparing for change, which can improve acceptance as discussed previously. This study found the development of NMP roles was communicated via nurse meetings/working party forums, suggesting limited involvement of junior clinical staff. Several studies previously discussed in

Chapter 2 (Farmer et al. 2011; Gray et al. 2010; Smith, Kane and Milne 2006) stress the importance of involving clinical staff during the development of NMP roles to improve understanding. For effective change management the involvement of stakeholders is essential to gain support for the introduction of change as outlined in Chapter 1. Therefore, these results suggest more dissemination of change in developing new roles is required to actively involve health professionals within organisations. Additionally, a supportive management structure is required to develop and sustain this change, alongside the leadership aspects previously discussed in objective 2 on page 132.

Clinical governance requirements for Non-Medical Practitioner roles

The fourth objective was to identify the clinical governance requirements for NMP roles. Delivering safe patient care is paramount, the need for which has been outlined in Chapter 1. The results indicated 78% (n=18/23) of organisations had developed specific clinical governance frameworks such as job descriptions, person specifications, competence packages, protocols and supervisory arrangements with clear line management and escalation structures for NMP roles. This finding is the first to clearly demonstrate the clinical governance frameworks developed for NMP roles.

Results from NMPs in this study found 87.5% of NMPs were clinically supervised by doctors, as recommended by the curriculum frameworks (RCSEng 2014; RCoP 2012; RCoA 2008; DH 2007b). These findings support literature discussed in Chapter 2. Additionally, 81% (n=87/96) of NMPs in this study had a clear line-management structure enabling escalation of concerns. Nearly half (45/96) NMPs had a nurse line-manager which was more commonly associated with ACP,

PSP and SCP roles, although doctors were more likely to manage PA and PA-As. Having a nurse line-manager may be associated with nurse and AHP revalidation, which currently is not required for PA and PA-s. Alternatively, the NMPs line-manager may be dependent upon whether the role is included within a medical or nursing workforce structure. Line management provides leadership to the practitioner and role and can affect its development and sustainability, yet nearly a third (n=29/96) of NMPs perceived there was no clear organisational structure. This is important as organisational structure provides support and team working to practitioners. No previous studies were identified which examined NMPs line management; therefore these findings provide new evidence on how NMPs roles are structured within organisations.

Professional regulatory codes and accountability maintains standards and patient safety, without this more responsibility is required from clinical supervisors and organisations. Currently, PAs and PA-As have no regulatory professional body and code of conduct to adhere to, but must be registered on a MVR register linked to RCoP and RCoA respectively. Qualitative findings from organisations (Table 4.11, page 118) and NMPs in this study (Table 4.13, page 120) showed NMPs perceived their roles were restricted in clinical practice by scope of practice, regulation and UK legislation which hindered their ability to effectively perform their role. PA and PA-A roles were most affected by the inability to prescribe or request radiological investigations and the requirement for clinical supervision; although the inability to prescribe affects other professionals such as ODPs, who are regulated by the HCPC. These findings confirm other studies discussed in Chapter 2 (Williams and Ritsema 2014; White and Round 2013; Farmer et al. 2011, Smith, Kane and Milne

2006), which reported restrictions in UK legislation hindering NMP role development. However, the importance of working within legal and regulatory frameworks cannot be underestimated.

Therefore, for unregulated NMP roles clear guidance and protocols are paramount. Results from NMPs and organisations in this study reported approximately 80% of organisations had specific policies/protocols for NMPs roles. This response could be interpreted in two ways; firstly, NMP roles require policies/protocols to provide a scope of practice to deliver safe clinical care. Secondly, that these NMP roles are still in their infancy and have not yet sufficiently developed advanced decision-making skills. These findings are in contrast to studies discussed in Chapter 2; with only Farmer et al. (2011) and Smith, Kane and Milne (2006) discussed protocols restricting NMP roles. Whilst Farmer et al. (2011) reported PAs were more willing than nurses to work outside protocols. Although, additional results from the organisations (Figure 4.43, page 115) and NMPs (Figure 4.45, page 117) in this study, perceived NMPs provided effective clinical decision-making responsibilities. Only Quick's (2013) study, discussed in Chapter 2, indicated the SCP performing advanced decision-making by independently performing a hernia operation. Therefore, whilst controversial it appears many NMP roles may not be functioning at an advanced level and warrants further exploration.

Results from this study also suggest NMPs lack a professional identity, since NMPs appear to have difficulty explaining their role to patients as previously discussed. NMPs most commonly described their role using their NMP title, whilst n=41 NMPs described their role as being an "assistant to the doctor", still providing no clear identity. No other study examined how NMPs describe or explain their role.

Although, Kneebone et al. (2006a) study discussed in Chapter 2, reported NMPs felt like an “outsider”, neither nurse/AHP. This lack of identity may be related to unclear titles, role boundaries and professional regulation as suggested by PSA (2016). The heterogeneity of the NMP roles and professional status of the practitioners only serves to further illustrate inconsistency and uncertainty. It could be argued that NMPs need to agree a common educational curriculum framework, title and accreditation to be registered on an Advanced Practice regulatory register, similar to Emergency Medicine in order to create a professional identity. This study is considered the first to report NMPs conveying a lack of professional identity and recommends NMPs and organisations develop strategies to better explain NMP roles to patients and health professionals thus improving understanding.

Contribution of Non-Medical Practitioners (NMPs)

The penultimate objective was to investigate the perceived contribution of the NMP role from an organisational and NMP perspective. Evaluating the contribution of the NMP role is paramount; to ensure improved service delivery and patient care thus meeting organisational objectives (NHS England 2014). Results from organisations (Figure 4.43, page 115) and NMPs (Figure 4.45, page 117) in this study perceived NMPs positively contributed to the organisation by being skilled and knowledgeable, whilst providing consistency to teams; thus improving service provision. Additionally, NMPs were perceived to provide continuity to patient care. These results are consistent with previous studies discussed in Chapter 2 (Table 2.3, page 18; Table 2.4, page 23; Table 2.5, page 27).

Furthermore, this study also found NMPs were perceived to support doctor training, concurring with Quick (2013), RCSEng (2016) and Gokani et al. (2016),

thus providing further evidence to dispel earlier assertions that NMPs negatively impact junior doctor training (Beckwith 2006). It was also reported here that NMPs were perceived to support nurses and AHPs. To the researcher's knowledge this finding of NMPs supporting doctors, nurses and AHP's training is new and has not previously been reported. Arguably these roles have the potential to strengthen working between doctors, nurses and patients. However, this finding requires further investigation to understand if the role is supporting nurses and AHPs in terms of clinical activity, inter-professional working or education.

Interestingly, only 13% (n=3/23) of organisations formally evaluated the NMP role. Nationally audits and service evaluations have been undertaken (Table 1.5, page 12) to evaluate NMPs against patient outcomes, but few research studies have been published. This is probably linked to the heterogeneity and complexity of NMP roles, which are intertwined in many aspects of healthcare, much of their effectiveness is hidden from measurement such as providing patient education in longer consultations. Therefore, undertaking a quantitative study to measure patient outcomes would be difficult due to the number of variables which could affect the results. However, quantitative data could be collected on clinical work activities and responsibilities providing additional evidence on NMPs contribution to patient care. Given the importance of demonstrating value of NMP roles (Imison 2016; Oliver and Leary 2012) especially with the current financial constraints of the NHS, using qualitative methods would allow further exploration of NMP roles.

Ultimately, the lack of robust evidence demonstrating the value of NMPs can convey uncertainty both at board and clinical level. Notably, this study found organisations and NMPs showing uncertainty on future recruitment; only a third of

organisations (Figure 4.16, page 93) were likely to recruit NMP roles in the future. This uncertainty can lead to feelings of vulnerability; a perception of being undervalued will impact on motivation, morale and contribution. Although over 90% NMPs in this study felt their work was motivating and challenging and 67% of NMPs felt valued (Figure 4.34, page 108), some NMP's qualitative comments (Table 4.12, page 119) indicated strong feelings of being overworked using statements such as "working donkey" and a "tool". Several other qualitative NMP statements highlighted being undervalued and under-utilised; these findings were not identified in the literature reviewed in Chapter 2. Similar findings were reported by NP roles in New Zealand; Harvey, Papps and Roberts (2015) used a descriptive survey and an in-depth interview mapping contribution where NPs appear to be undervalued and under-utilised due to a lack of organised national implementation. It is unclear why responding NMPs are feeling undervalued, although it could be associated with the lack of professional identity discussed earlier within the context of clinical governance. Additionally, it may be associated with being overworked (Figure 4.34, page 108), poorly integrated into clinical teams, or a lack of career progression. Continued career progression was a concern highlighted by RCSEng (2016) project which reported a potential "glass ceiling effect" for NMPs working within the extended surgical team. These roles are new to the UK and attract highly motivated practitioners who want to be challenged. This result of feeling undervalued may herald a forthcoming problem; as NMPs complete their training, gain confidence and become established. Therefore, creative and sensitive management will be required to ensure recognition and utilisation of the NMPs skills thus preventing retention issues.

Educational requirements for Non-Medical Practitioner (NMP) roles

The final objective was to ascertain the educational requirements for the NMP role. The researcher has been unable to identify any previous UK study examining the level of NMP education or its provision. Education is essential to underpin the knowledge and skills for clinical and professional practice for all NMP roles (HPCP 2016; NMC 2015). Findings indicate all NMPs considered education and training was required for their role. There was agreement between organisations and NMP's survey findings; as organisations reported providing opportunities for education and training, and over 75% of NMPs reported being offered educational opportunities. Interestingly, this study found over 90% of NMPs had a degree, and 36% (n=35/96) had a master's or higher qualification. As previously discussed in Chapter 1, the majority of these NMP roles are considered to work at an advanced level, except for the AP and SFA role which is considered an extended/expanded role. Within the UK, advanced practitioners are expected to attain a Masters (level 7) qualification (DH 2010). However, currently NMP educational curriculum framework standards differ depending on the role; for example, SCP education was originally at degree level but was upgraded to Masters by RCSEng (2014). Additionally the PA and PA-A courses are currently undertaken at postgraduate diploma with conversion to Masters post-qualification as an option post-qualification. Therefore, this study's results are new, reflecting inconsistency of NMP education and the current UK curriculum frameworks. Furthermore, the level of education may impact on the ability of NMPs to work at an advanced level in clinical practice such as incorporating clinical decision-making, research and leadership.

Additionally, this study's results report only 65% (n=15/23) of organisations had an educational budget for the development of NMPs. This gives concerns for the future development of NMPs, given the existing financial deficits discussed in Chapter 1. Organisations in this study report Advanced Practice courses were most likely to be funded by organisations, although PA roles are generally self-funded (University of Birmingham 2017). NMPs accessed HEI providers' throughout the UK. This finding potentially demonstrates organisations taking a generic approach to NMP education, rather than funding specialist qualifications such as SCP; albeit this finding cannot be substantiated by previous literature.

As discussed in objective one, more NMPs were based in the Midlands, this study also found more HEI provision for NMPs in the Midlands region (Figure 4.51, page 124). It is possible that these findings may reflect HEI commissioning for PA (Begg, Ross and Parle 2008) and PA-A roles (RCoA 2017) which was originally based in the Midlands, and therefore may account for this uneven distribution of HEI provision. Furthermore, the East (NHSHEE 2014) and West Midlands (NHSHEE 2015) have both developed Advanced Clinical Practitioner frameworks clearly establishing and standardising the educational and clinical aspects of the ACP role.

NMPs working in advanced practice roles should incorporate additional elements to the role such as education, as discussed in Chapter 1. Whilst, the exploration of NMPs undertaking education within this study is limited, it is considered worthy of further discussion. This study found NMPs undertake teaching within their role to varying degrees. The majority of NMPs perceive that they provide expert clinical knowledge (Figure 4.45, page 117), albeit respondents were not required to specify whether this is provided to patients or health professionals due to

the construction of the questionnaire. Furthermore, additional responses indicate over 50% of NMPs never/rarely taught outside the clinical area, although teaching was more frequently delivered by the PA role. Other studies identified in Chapter 2, also found NMPs being used as an educational resource to teach and support junior staff (Gokani et al. 2016; Quick 2013; Farmer et al. 2011), although, it is unclear from these studies whether this educational support occurred within or outside the clinical area.

NMP roles offer a rich resource to educate patients and professionals. Encouraging clinical education would provide an opportunity to gain additional teaching skills and extend professional development whilst adding further variety to the role. Therefore, this result would suggest NMPs could be extended to teach in academia, providing the opportunity to educate healthcare students, raising an awareness of the NMP role but also providing valuable clinical expertise. This study shows for the first time that NMP roles extend beyond clinical practice therefore recognising the value, flexibility and interprofessional abilities of NMPs.

Summary of discussion

Seven NMP roles were identified being distributed nationally; regional variation was found. NMP roles were developed to meet service needs and workforce developments, yet fluctuations were associated with national policies. It is perceived that NMP roles positively contribute to the continuity of patient care, whilst strengthening interprofessional working. Several factors were identified which influence NMP role development and integration such as leadership, national policy, service needs and pay. Some NMPs were perceived to experience difficulties initially

with acceptance from other health professionals, however this improved with time. Active clinical leadership could improve this experience.

Additionally, NMP roles provide an opportunity for nurses and AHPs to progress their career clinically, thus retaining practitioners within clinical healthcare. This study found NMPs work within a variety of clinical specialities but predominantly general surgery, anaesthetics and orthopaedics and provide flexibility to service provision, but could be further utilised.

However, inconsistencies were found in clinical governance; identifying variation with AfC banding, job description, education and national guidance. A lack of regulation is perceived to affect the PA and PA-A role, limiting their scope of practice and ability to fully undertake the role safely. The majority of NMPs feel motivated and challenged; however some reported feeling undervalued, under-recognised and under-utilised and had difficulty clearly explaining their role, raising concerns of professional identity.

Limitations of the study

Given this study was a descriptive survey which reports the opinions, beliefs, behaviours and perceptions of respondents the results provide a greater understanding of the issues but not definitive conclusions. As previously discussed surveys can suffer low return rates and this study was no exception. Only n=23/246 healthcare organisations responded with useable data, North East of England was not represented and large organisations were under-represented, potentially these organisations experienced difficulties retrieving the information due to the variety of role titles. Given this low response rate, results may not reflect the wider population who did not respond and should be tentatively viewed. This limitation was

acknowledged at the outset in constructing the study design, that the number of titles could potentially provide difficulties with organisations retrieving such information. In hindsight, it may have been more prudent to request information on whether any NMP roles existed in healthcare organisations by submitting a request for Freedom of Information (Freedom of Information Act 2000) before distributing the survey to healthcare organisations.

Similarly, even though n=96 usable NMPs responses were obtained in Study B, the potential for snowball sampling bias exists through limited access to the potential population and therefore sample self-selection may have occurred. Several roles were under-represented; responses from the PAs were limited since the Faculty of Physician Associates' did not wish to distribute the survey as previously discussed. Whilst, the AP role was not acknowledged during the literature review and subsequently emerged during the survey. Consequently, other NMP roles may exist in practice but were not included within the survey; therefore the responses may not be truly representative of NMPs. This is a limitation of sample snowballing, especially for NMP roles which are unknown at the outset.

The large quantity of data derived from the two surveys which included qualitative data from the open-ended questions, proved difficult for a novice researcher to manage. In hindsight it may have been easier to have undertaken two separate research projects, and then low response rates from the survey could have allowed for additional data collection methods to be employed such as case studies or interviews, to provide more data for analysis and therefore more reliable findings.

Due to the uniqueness of this survey a validated questionnaire tool could not be used. Potentially both surveys could have been more closely aligned, further

strengthening the reliability of the results. Furthermore, the extensive variety of NMP titles provided too small a sample to undertake non-parametric statistical analysis.

Consequently, given these limitations outlined, this study's result are not considered generalisable and cannot provide robust evidence, but this study has provided a national picture of the NMP roles thus illustrating a changing workforce in acute UK healthcare.

Implications for clinical practice, Higher Educational Institutes and legislation

The following recommendations for clinical practice, education and legislation are included in Table 5.1 along with a clear rationale for each.

Table 5.1: Implications for clinical practice, education and legislation

Implications for	Recommendation	Rationale
Clinical practice	Develop strategies to clearly explain the NMP role.	To improve the understanding of NMP roles and reduce hostility from other professionals
	Developed varied job plans to employ NMP roles in a variety in different clinical settings	NMP can be utilised in elective/emergency care and teaching beyond clinical practice
	Understand regulatory status of NMP roles and health professional which may limit their scope of practice	Ensure NMP role fulfils service requirements
	Align job descriptions and grading to the national frameworks and guidance during the developmental stage of NMP roles	To ensure role equitability both within and between organisations
	Promote NMP roles as clinical career pathway	To encourage retention of experienced staff by creating a new clinical; career pathway
Education	Educate all NMPs to Master's level according to national advanced practice frameworks	To ensure a standard consistent workforce throughout the UK
	Educational funding should be identified for NMP roles at the outset	To ensure educational provision for NMPs
	Continued allocation of clinical supervision to support clinical learning	To ensure effective clinical governance
	NMPs should be used to provide educational support to patients and other health professionals both within and outside clinical practice	To improve the understanding of staff and patients and fully utilise the NMP role and promoting this alternative career pathway
HEI	Further develop the regional educational frameworks to create a national educational framework, after reviewing the outcome of the current RCoEM pilot on accreditation which may provide a clearer way forward in nationally standardising curriculum frameworks	To provide national consistency in the education of NMP roles
Legislation	Professional regulation of PA and PA-A roles	To improve role utilisation and scope of practice improve
	Addition of prescribing rights to other health professionals such as ODPs	Improve the versatility of all practitioner recruited to these NMP roles
	The creation of advanced register, regulated by professional bodies. However, this requires a national drive, which may occur following the review of the RCoM and RCN credentialing pilot scheme.	Would improve role clarity and credibility, potentially improving acceptance, thus allowing NMPs to more fully contribute to the delivery of care

Further Research

A review of the UK literature has demonstrated a paucity of empirical research exploring NMP roles in the UK, particularly in acute healthcare. Due to the complexity and individual nature of NMP roles within teams and services, evaluating the overall contribution of the NMP remains challenging. Given this study's findings further research is recommended in Table 5.2.

Table 5.2: Further recommended research

Research recommendation	Rationale
Quantitative research: To examine clinical activities of NMPs in practice	Given the heterogeneity of NMP roles quantitative comparative methods would be inappropriate. However, information on clinical activities and responsibilities undertaken could be collected using this approach.
Qualitative research: Examine patient, health professionals and organisations experiences, attitudes and understanding of NMP roles. Investigate interprofessional team working including change management, leadership, decision-making, level of autonomy and communication in clinical practice of NMPs Explore health professionals views on regulation and key elements of NMP role Investigate the structure and long-term career development for NMPs	To explore NMP roles further by gathering in-depth information, views and opinions of the NMP roles identified in this study thus generating new evidence and a greater understanding of NMP roles. Various qualitative approaches could be used such as ethnography, interpretive/descriptive phenomenology, or grounded theory. Although descriptive phenomenology would be more difficult if the researcher was a NMP.

In Conclusion

This study set out to explore the development and integration of Non-Medical Practitioner (NMP) roles within acute healthcare in the UK from a healthcare organisational and NMP perspective. The objectives were realised; NMP roles are distributed nationally, with regional variation providing a unique national picture of the changing NMP workforce within acute healthcare. Seven NMP roles were identified, NMPs were perceived to positively contribute to improved consistency with teams and continuity of patient care. Several factors were perceived to influence the development, recruitment and integration of NMP roles such as national policy and service needs. Clinical governance issues such as regulation, AfC banding and education were highlighted and raise potential concerns with professional identity and under-utilisation of NMPs.

A number of recommendations for future NMP workforce development and additional research have been suggested within this thesis. Immediate future work will focus on dissemination of these findings, together with the considered recommendations, to encourage professional debate and attain some impact and influence of this work on NMP roles in UK acute healthcare provision.

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Glossary of key terms

Advanced Nurse Practitioner: a qualified nurse with advanced clinical making-decisions and autonomy, working at Masters Level

Advanced role: "A *registered practitioner with an expert knowledge base, complex decision-making skills and clinical competencies for expanded autonomous scope of practice, the characteristics of which are shaped by the contact in which the individual practices. Demonstrates at Masters Level and meets the education, training and CPD requirements for Advanced Clinical Practice…."* (NHSHEE 2015:15)

Advanced Scrub Practitioner: now referred to as Surgical First Assistant; qualified practitioner who assists the surgeon to undertake operative procedures.

Agenda for Change (AfC): is the current National Health Service (NHS) grading and pay system for NHS staff, with the exception of doctors, dentists, apprentices and some senior managers. This system considers the knowledge, skills and job requirements, against a set of national job profiles and Knowledge and Skills framework to provide equality in evaluating the jobs and pay banding, whilst providing career progression.

Allied Health Professionals: include a variety of professionals who work within healthcare such as physiotherapists, Operating Department Practitioners, radiographers.

Arthroplasty Practitioner: is practitioner commonly physiotherapist or nurse who manages patients before and after hip and knee replacement.

Association of Cardiothoracic Surgical Assistants: a professional body for Surgical Care Practitioners working in Cardiothoracic surgery represented by represented within the Society of Cardiothoracic Surgery.

Association of Perioperative Practice: a professional body with a specific interest in perioperative practice, representing qualified and unqualified perioperative practitioners and educationalists.

Association of Physician Assistant Anaesthesia: is the representative body of Physicians' Assistants (Anaesthesia) in the UK.

British Orthopaedic Association: a professional body for British Orthopaedics provides education for Arthroplasty Practitioners, among others.

Bristol Online Survey: UK based online survey tool which administers and distributes surveys.

Care Quality Commission: is an independent regulator of all health and social care services in England.

Continuing Professional Development: continuous process of learning, maintaining, recording, individual skills, knowledge and experience to practise safely and effectively

Department of Health, Social Security and Public Safety: Part of the Northern Ireland Executive devolved government which oversees healthcare, amongst others.

Ear, Nose and Throat: is a medical speciality that manages disorders and conditions of the ear, nose, and throat (ENT) region.

Elective Care: routine planned healthcare provided at GP's or in the hospital

Emergency Care: provision of prompt assessment and treatment of healthcare which is unplanned and potentially caused by trauma or illness.

Emergency Advanced Care Practitioner: is a qualified practitioner commonly a paramedic or nurse who works in pre-hospital or emergency department who works autonomously at an advanced level.

Emergency Nurse Practitioner: is a qualified nurse working specifically in emergency department and frequently carries out extended duties such as suture.

European Working Time Directive: is a European directive effective from August 2009 which reduced junior doctors working hours from 56-48 per week.

Extended role: *"Extended practice describes a registered health professional undertakes clinical tasks or roles usually associated with another profession. It may be that an individual is only occasionally required to use a skill associated with extended practice or performs these tasks as part of the health professional's primary function". For the purpose of this study the Surgical First Assistant is classified as an extended role.* (Council for Health Care Regulatory Excellence 2010:3).

Faculty of Physician Associates: is a professional membership body for the Physician Associate profession.

Foundation Year 1&2: is a two year generic training programme for doctors which forms the bridge between medical school and specialist/general practice training.

The Freedom of Information: gives any person the right to access recorded information held by public sector organisations.

General Practitioner: is the professional name given to the local doctor based in primary care within the UK.

Health and Care Professions Council: professional regulatory body for Allied Health Professionals.

High Dependency Unit: ward closely linked to intensive care which provides more extensive management of patients with higher staff to patient ratios.

Higher Educational Institution: is a university or college which has the ability to write courses and award degrees depending upon regulatory criteria.

Integrated Research Application System: is an online system for preparing regulatory and governance applications for health and social care research.

Intensive Care Unit: a ward which provides intensive management of critically ill patients, with very high staff to patient ratios.

Managed Voluntary Register: is a voluntary register which allows employers to check whether a practitioner is a fully qualified and meets approved entry criteria.

National Health Service Heath Education England: is a new national leadership organisation for education, training and workforce development in the National Health Service sector in England.

National Health Service: the public health service in UK which provides healthcare services to UK residents which is free at the point of care. The health service has been devolved into Scotland, Northern Ireland, England and Wales and so have desperate agendas.

National Institute for Health and Research: organisation funded by the NHS to support health and care research, whilst developing researchers.

New role: for the purpose of this study the Physician Associate and Physician Assistants in Anaesthesia have been classified as a new role. Currently neither role is formally regulated by a professional body, but is managed on a voluntary registers with Royal College of Physicians and Anaesthetists respectively.

NHS Education Scotland: is the devolved National Health Service in Scotland responsible for education within healthcare

NHS Wales: is the devolved National Health Service in Wales responsible for setting and maintaining standards within healthcare

NHSmail: is the secure email service for health and social care in England and Scotland

Non-Medical Practitioner: qualified registered practitioner with professional regulatory body or on a Mandatory Voluntary Register undertaking a role traditionally performed by a medical doctor and therefore is not medically qualified.

Nurse Practitioner: a registered nurse educated and trained to provide health promotion at an advanced level diagnosing and treating acute and chronic condition.

Nursing and Midwifery Council: a professional regulatory body for nurses.

Operating Department Practitioner: a qualified practitioner educated and working in perioperative practice.

Patent Group Directive: written instruction for health professionals to supply or administer medicines to patients, within specific circumstances.

Perioperative Care Collaborative: joint collaborative group of professional bodies and associations that represent the different health professionals working within perioperative practice, both in clinical practice and in education which aim to influence healthcare policy.

Perioperative Specialist Practitioner: a registered practitioner who works on the ward and in clinic at an advanced level as part of the extended surgical team.

Physician Assistant in Anaesthesia: highly trained and skilled healthcare professionals who are qualified to administer anaesthesia under the supervision of an anaesthetist.

Physician Associate: formerly known as Physician Assistant, qualified with a generalist medical based education, who work alongside doctors and provide medical care as an integral part of the multidisciplinary team. Physician associates are dependent practitioners working with a dedicated supervisor, but are able to work autonomously with appropriate support.

PRISMA: systematic flow chart to providing transparency in reporting of articles identified and selected through a systematic process.

Professional Standards Authority: oversees statutory bodies that regulate health and social care professionals in the UK, they assess performance, conduct audits, scrutinise regulator decisions and report to Parliament. They also set standards for organisations holding voluntary registers for health and social care occupations and accredit those that meet them.

Registered First Assistant Nurse: an American qualification for registered nurses with advanced training who assist the surgeon with surgical procedures equivalent to SCP in UK.

Research Ethics Committees: is a formal committee, local and national to ensure compliance of ethical standards for all research.

Royal College of Anaesthetists: is a professional medical body representing Anaesthetists in the UK.

Royal College of Emergency Medicine: is a professional medical body representing doctors undertaking emergency medicine.

Royal College of Nursing: is a professional body and nursing union.

Royal College of Physicians: is a professional medical body representing physician.

Royal College of Surgeons, Edinburgh: is a professional body representing surgeons and maintaining the standards or perioperative care in UK.

Royal College of Surgeons, England: is a professional body representing surgeons in UK.

Specialist Registrar: Specialist Registrar (SpR) is now referred to as Specialty Registrar (StR) or Core Training (CT) and starts 3 years after qualifying as CT 1 gradually gaining years' of experience and qualifications as part of a training programme to attain a consultant position.

Statistical Package for the Social Sciences: is an electronic statistical package used for quantitative data analysis.

Surgical Care Practitioner: a qualified nurse or Allied Health Professional who works within the surgical team on ward, clinic and can perform surgical procedures under indirect supervision.

Surgical First Assistant: a qualified nurse, Midwife, Allied Health Professional who assists during surgeon during an operative procedure under supervision.

Systematic Review: is a review defined by a clear research question, which uses defined methods and criteria to select and critically appraise literature.

Uniform Resource Locator: a global address on World Wide Web internet.

United Kingdom: is a country within Western Europe.

United States of America: is a large country located in North American continent.

Chapter 6 Appendices

Appendix 1: Detailed overview of Non-Medical Practitioner roles

[Adapted from RCSEng 2016]

Table 6.1: Non-Medical Practitioner roles

NMP role	Definition	Background of practitioner	Skills	Education level	Education curriculum framework	Professional accountability	AfC Band
Arthroplasty Practitioner (AP) **Extended role**	Healthcare professionals working in extended roles as part of the team caring for arthroplasty patients. Their main purpose is to bring together practitioners involved in long-term follow up of patients who have undergone arthroplasty surgery.	Nurse /AHP	They provide care at one or more points in the patient pathway from referral for surgery, through pre-operative screening, peri-operative and post-operative care and through long term follow up. They work as part of the team with the orthopaedic surgeons	Additional training	British Orthopaedic Association (BOA)	NMC; HCPC ACPA is affiliated to the British Orthopaedic Association.	7
Advanced Clinical Practitioner (ACP) **Advanced Role**	A registered Practitioner with an expert knowledge base, complex, decision making skills and clinical competencies for expanded autonomous scope of practice, the characteristics of which are shaped by the content in which the individual practices (HEE 2016)	Nurse /AHP	Taking medical histories, performing examinations, Request investigation, Prescribe medication, diagnosing illnesses, analysing test results, Autonomously plan and implement care	Nurse Masters level including Health Assessment and Non-Medical Prescribing 3-years PT	Advanced Clinical Practice NHSHEE 2015 & 2016; NHS Wales 2010; NES 2010	NMC; HCPC	7/8a
Perioperative Specialist Practitioner	A non-medical practitioner, working at an	Nurse/AHP	Pre-operative examination and physical assessment, identifying and performing	BSc 18-months	Dh 2007b	NMC; HCPC	7

(PSP) **Advanced Role**	advanced level in clinical practice ensuring continuity of patient care within preoperative and postoperative settings and supervised by a consultant surgeon working as a permanent member of the extended surgical team. DH 2007		investigations. Assessing postoperative care including recognising surgical complications Provides a consistent member in the surgical team. Evaluates care including follow-up post-discharge	PT Training stopped			
Physician Associate (PA) **New Role**	'a new healthcare professional who, while not a doctor, works to the medical model, with the attitudes, skills and knowledge base to deliver holistic care and treatment within the general medical and/or general practice team under defined levels of supervision'. (Competence and Curriculum Framework for the Physician Assistant 2012)	The US has used physician assistants since the 1960s. They grew out of a need for highly skilled healthcare professionals to deliver care in underserved populations. First introduced into the UK workforce in 2003, in the West Midlands. Renamed physician associates in the UK. (UK Association of Physician Associates, 2015).	Taking medical histories, performing examinations, diagnosing illnesses, analysing test results, developing management plans	PA Post Grad Diploma 2-years FT	Competence and Curriculum Framework for the Physician Assistant, 2012.	No statutory professional regulation Managed Voluntary Register. Faculty of Physician Associates (PAs) affiliated to RCoP	7

Physician Assistant in Anaesthesia (PA-A) **New Role**	PA-As work under the direction and supervision of a consultant anaesthetist. Typically they work in a 2:1 model where there is one consultant anaesthetist supervising two PA(A)s or a trainee anaesthetist and a PA(A) simultaneously in two operating theatres. PA(A)s can develop specialist skills in regional anaesthesia such as axillary blocks and provides sedation for specific interventions.	Nurse/Operating Department Practitioner (ODP)/biomedical science degree PA(A)s were introduced in 2004, with the potential to support the service.	Preoperative interviewing and physiological and psychological assessment of patients • Collecting patient information (taking a history, physical examination, laboratory, radiographic and other diagnostic data) • Implementing the anaesthesia care plan • Administering and/or participating in the planned administration of general anaesthetic for a variety of surgical and medically-related procedures • Using a broad variety of techniques, anaesthesia agents, drugs and equipment in providing anaesthesia care • Teaching, supervising and assessing other team members	Post Grad Diploma 2-year FT	RCoA 2008	Managed Voluntary Register held by the Association of Physicians' Assistants (Anaesthesia). Can become an affiliate of the Royal College of Anaesthetists.	7
Surgical Care Practitioner (SCP) **Advanced Role**	'A registered non-medical practitioner who has completed a Royal College of Surgeons accredited programme (or other previously recognised course), working in clinical practice as a member of the extended surgical team, who	Nurse/ Operating Department Practitioner (ODP)	Preoperative assessment, including clinical history taking and physical examination • Enhancing the communication link between theatre, patient and ward • Involvement in the team completion of the surgical safety checklist • Assisting with the preparation of the patient,	MSc since 2015 Previously BSc 2-years PT	RCSEng 2014	NMC; HCPC Can become an affiliate of the Royal College of Surgeons Edinburgh.	7/8a

	performs surgical intervention, pre-operative care and postoperative care under the direction and supervision of a Consultant surgeon' (RCSEng 2014)		including urinary catheterisation, venepuncture, patient positioning and preparation • Providing assistance with surgical procedures • Some technical and operative procedures according to individual scope of practice • Facilitating the training of trainee surgeons • Arranging appropriate pre and postoperative investigations • Post-operative care – including wound assessment and management • Evaluation of care, including the discharge process, follow-up and outpatient activities (Association for Perioperative Practice, 2014)				
Surgical First Assistant (SFA) **Extended role**	The role undertaken by a registered practitioner who provides continuous competent and dedicated assistance under the direct supervision of the operating surgeon throughout the procedure, whilst not performing any	Nurse/ Operating Department Practitioner (ODP)	Tasks that distinguish the SFA from a scrub practitioner include: • Cutting of deep sutures and ligatures under direct supervision • Nerve and deep tissue retraction (retractors should not be placed by an SFA but by the operating surgeon) • Handling of tissue and manipulation of organs for	Extended role 6-months PT	Perioperative Care Collaborative, 2012	NMC; HCPC Can become an affiliate of the Royal College of Surgeons Edinburgh.	5/6

	form of surgical intervention' (Perioperative Care Collaborative, 2012).	exposure or access • Assisting with haemostasis in order to secure and maintain a clear operating field (including indirect application of surgical diathermy by the operating surgeon) • Use of suction as guided by the operating surgeon • Camera manipulation for minimal access surgery • Assistance with wound closure (Perioperative Care Collaborative, 2012)

Appendix 2: Development of Non-Medical Practitioner roles internationally

UK redesign in delivering health services has mirrored various international healthcare models where Non-Medical Practitioner (NMP) roles are recognised in countries such as Netherlands, Sweden, New Zealand and United States of America (USA) (Association of Anaesthetists in Great Britain and Ireland (AAGBI) 2011; Hooker and Kuilman 2011; Quick, Hall and Jones 2014; Kai 2014), Canada, Taiwan, South Africa and Ghana (Legler, Cawley and Fenn 2007; Chiu, Tsay and Tung 2015). The USA led the development of advance practice, with surgical nurse roles being introduced in the early 1990's, although competence frameworks were only introduced in 1998 (Rothrock 1999:40). More recently Australia, New Zealand and the Netherlands have introduced NMP roles in conjunction with relevant legislation and scopes of practice. Within these countries a variety of skilled NMPs provide care previously undertaken by doctors in roles such as Physicians Assistants, Nurse Anaesthetists and Registered Nurse First Assistants (RNFA). Whilst these roles might appear new, they have evolved with time when clinical demand outweighed supply. It is reported that during the Crimean War nurses would assist the surgeon on the battle field (Rothrock 1999). The Physician Assistant originated in the USA in the 1960's, where they are now firmly integrated within the medical team. These roles have grown from practitioners being considered handmaidens to doctors, to professionals undertaking highly skilled, autonomous episodes of patient care management, thus creating a dynamic inter-professional team.

Appendix 3: Advanced Practice Credentialing Programme (Pearce 2017)

This pilot programme offers an Advanced Nurse Practitioner an assessment by approved assessors using criteria (outlined below) to enter and remain on an Advanced Register (Royal College of Nursing (RCN) 2017). This will improve the consistency and standard of Advanced Practice and has been recommended by Professional Standards Authority (PSA 2016) which regulates professional regulatory bodies such as NMC.

Criteria:

- Masters level education
- Non-medical prescribing
- Verifiable job plan
- Experience and expertise in leadership, education, research and clinical practice
- Assessment in clinical practice
- Clinical references and validation of continuous professionals development
- A fee to enter the register which will require renewal

Appendix 4: Literature Search Strategy

A general search of advanced practitioner roles and international literature sources was undertaken, since NMP roles were originally introduced to deliver healthcare in America (Rothrock 1999). However, the search in this study identified various differences; a cross-sectional survey of International Council of Nurses revealed 13 different titles across 23 countries (Pulcini et al. 2010). This supports a previous study by Duffield et al (2009) which noted differences in title, role and scope of advance nursing practice. The findings from Duffield et al. (2009) and Pulcini et al. (2010) potentially reflect differences in the provision of healthcare globally; hence this literature search was restricted to the United Kingdom thus ensuring the search terms accurately represented UK clinical practice.

The literature review aimed to explore NMP roles within acute healthcare in the UK. An integral part of the process is the search itself, therefore, for this study; the search focused on primary research in the UK. As discussed in Chapter 1, the first NMP national educational curriculum frameworks were published in 2006; therefore the author used this date to start the literature search, although it is acknowledged that there is a delay between undertaking research, writing and publication. Literature was search from January 2006 – April 2017. Using a Population Intervention/indicator Comparison Outcome (PICO) framework (Pardee and Rundquist 2011) a research question was formed (Figure 6.1) to enable focused searching of the literature. **"What factors influence the development of Non-Medical Practitioners roles within Acute Healthcare in the United Kingdom?"**

Population	Intervention	Control	Outcome
Acute & Private/Independent Healthcare Organisations United Kingdom	Non-Medical Practitioner roles	N/A	Development and integration of role

Figure 6.1: Illustrates the formulation of a research question using PICO framework

According to Fink (2010) electronic data bases provide a comprehensive and efficient system of searching for evidence. Six databases related to healthcare were searched and are identified in Table 6.2, page XI. Searching the Cochrane database revealed one systematic review (Lewis et al. 2014), which reviewed physician anaesthetists versus non-physician providers of anaesthesia for surgical patients; this review did not reveal any further UK literature. Additionally, professional organisational website (AfPP, RCSEng, RCoA, RCoP) website were searched for relevant documents revealing three reports (RCSEng 2016; Miler, Cox and Williams, 2009; AAGBI 2011), according to Cronin, Coughlan and Smith (2015) this type of literature is known as Grey literature.

Aveyard (2014:75) suggests identifying key words and terms is an essential element to the search strategy and must reflect the research question:

"**What factors influence the development of Non-Medical Practitioners roles within Acute Healthcare in the United Kingdom?"**

Search terms (Table 6.2, page XI) were derived from personal experience, the published literature and educational curriculum framework documents (DH 2006a, DH 2007b; RCoA 2008; Knight 2009; Abraham 2013; RCoP 2012; Quick 2013; RCSEng 2016). Search limits with a brief rationale as for these choices are

illustrated in Table 6.3. Applying these search terms to databases, plus searching professional organisation websites revealed 131 articles.

Table 6.2: Key search terms and data bases used

Search terms	Databases
Advanced Clinical Practitioner* Laparoscopic Nurse/Practitioner* Perioperative Specialist Practitioner* Physician Assistant* Physician Assistant* in Anaesthesia Physician Associat* Surgical Care Practitioner* Surgical First Assistant* Surgical Nurse Practitioner* Surgical Practitioner*	Cinhal Cochrane Database Medline ProQuest Pubmed Scopus
***** feature used in some databases to allow truncation of the word	

Table 6.3: Search limits applied and rationale

Search Limits	Rationale
Literature published from 2006 onwards	NMP curriculum frameworks were first introduced in 2006
Human	Relevant to patient care
Peer reviewed primary research	Publishing an article in a peer review journal provides an additional quality indicator to the research article
United Kingdom	Exclusion of literature outside UK due to difference internationally with titles, roles, scope of practice and healthcare delivery making comparison difficult

To further reduce the literature searched Aveyard (2014:76) suggests identifying inclusion and exclusion criteria as outlined in Table 6.4, page XII. This criteria was applied to electronic databases or used when skim reading. According to

Moule and Hek (2011) qualitative research has the ability to explore experiences and opinions, whilst quantitative research can collect attitudes and values. Consequently, empirical research including both qualitative and quantitative research methodologies was included. However, audit and service evaluation were excluded since they were considered more acceptable in evaluating and monitoring the effectiveness of roles (Hall and Dearmun 2009).

After applying the search terms and the inclusion/exclusion criteria, 12 articles remained investigating Advanced Clinical Practitioner (ACP), Surgical Care Practitioner (SCP), Perioperative Specialist Practitioner (PSP), Physician Associate (PA), Physician Assistant in Anaesthesia (PA-A) roles. A diagrammatic overview of the search results is illustrated in (Table 2.1, page17).

Table 6.4: Inclusion and exclusion criteria with rationale

Inclusion Criteria	**Exclusion Criteria**	**Rationale for exclusion criteria**
Qualitative research	Literature reviews	Not primary research. Literature reviews were read for other primary research studies
Quantitative research	Audit/service evaluation	Not empirical research
Mixed methodology research studies	Discussion papers/books	Not empirical research
United Kingdom (UK)	Commentary/opinions/letters/reports	Not empirical research
	Systematic Review	Not primary research. Systematic reviews were read for relevant primary research studies
	Grey literature & reports	Significant variations in quality and lack of peer review
	Primary Care	Research aim was to exploring Acute care settings only
	Duplicates	
	Advanced Nurse Practitioner	Significant number of research studies exist
	Endoscopist	Significant number of research studies exist

Inclusion Criteria	Exclusion Criteria	Rationale for exclusion criteria
	Emergency Care Practitioner	Significant number of research studies exist
	Other countries outside UK	Comparison difficult due to different healthcare systems, titles roles and legislation

From the original 12 studies retrieved the author excluded two studies, Nestel et al. (2010) and Kneebone (2006b), since both articles primarily evaluated PSP/SCP training programmes within an academic institution. Consequently ten studies remained for further in-depth analysis. These studies were classified according to methodological approach, so allowing comparative critiquing and are coloured coded to the data extraction Table 2.3; Table 2.4;Table 2.5 (page 18, 23, 27) to assist in identification of research methodologies.

A data extraction table is used to summarise each study, highlighting the main points (Aveyard 2010:140). A data extraction model citied in Woodward and Webb (2001) was adapted by including the level of hierarchy of evidence (HE). This model divides the table into two; the first section of the table outlines the overall design and sample, whilst the second illustrates data collection methods, summary findings and rigour offering a detailed, comparative framework highlighting the main characteristics of each study thus aiding synthesis.

Table 6.5: Hierarchy of Evidence, adapted from Melnyk & Fineout-Overholt (2011)

Level 1	Systematic reviews, met-analysis of relevant Randomised Controlled Trials (RCT)
Level 2	At least one well-designed RCT
Level 3	Well-designed Controlled trial without randomisation (quasi-experimental)
Level 4	Well-designed case-control and cohort studies (non- experimental)
Level 5	Evidence from systematic reviews of descriptive and qualitative studies
Level 6	Single descriptive study or qualitative study
Level 7	Evidence from expert opinion, regulatory opinions, and/or reports of expert committee's

The author classified each study retrieved according a hierarchy of evidence model (Table 6.5) which is included within the data extraction Table 2.3,Table 2.4,Table 2.5, page 18-27. This was included to acknowledge the type of evidence retrieved whilst allowing methodological comparison, rather than establishing an order of merit, given the importance of including a wide range of research designs used to explore NMP roles.

From the ten studies identified five (Kneebone et al. 2006a; Moorthy et al. 2006; Cheang, Weller & Hollis 2009; Quick 2013; Gokani et al. 2016) investigated SCP/PSP roles, three studies (Farmer et al. 2011; White & Round 2013; Williams & Ritsema 2014) examined PA roles and two studies (Gray et al. 2010 and Smith, Kane and Milne 2006) investigated PA-A roles. The main themes extracted from each study's findings were plotted and categorised within Table 6.6.

Table 6.6: Themes emerging from 10 studies retrieved

Themes	Findings	Farmer et al.	Kneebone et al.	Quick	Smith, Kane & Milne	Cheang, Weller & Hollis	Moorthy et al.	Williams Ritsema	White & Round	Gray et al.	Gokani et al.
Clinical Governance	Safety	*		*							
	Supervision	*	*	*	*			*	*		*
	Protocols				*				*		
	Regulation/legislation	*	*		*			*			*
	Scope of practice	*	*	*	*			*	*		
Service delivery	Competence	*			*			*			*
	Clinical Activity	*	*		*			*	*		*
	Communication	*	*	*		*		*	*		
	Patient experience	*		*				*			*
	Improved patient care	*							*		*
	Continuity of care			*	*	*	*		*		*
	Patient understanding of role		*	*				*			
	Team working-valued/skilled	*	*	*	*	*		*	*	*	*
	Sharing workload	*		*	*	*			*	*	*
	Flexibility in teams	*		*				*			
	Commitment to role	*	*	*					*		
	Consistency in team	*		*				*			
	Service provision/development	*	*	*	*				*		*
Education	Education & training		*	*	*			*	*	*	*
	Academic studies	*	*		*				*	*	
	Clinical skills	*	*	*	*			*	*		*
	Understanding of role	*	*	*	*	*	*	*	*	*	
	Previous healthcare experience				*					*	*
				*						*	*
	Supporting junior doctors training										
Understanding and expectations	Role boundaries		*		*					*	
	Competition		*						*	*	*
	Understanding/expectations of role	*		*	*			*	*	*	
					*					*	
	Resistance/encroachment/threatened		*		*			*	*	*	

To reduce the element of researcher bias in synthesising and appraising the literature and to highlight the study's strengths and weaknesses an appraisal

framework was used. A range of different appraisal tools exist; according to Cutcliffe and Ward (2007:39) all appraisal tools have strengths and limitations, with no perfect model existing. Different frameworks were required to appraise quantitative and qualitative studies within their comparative research designs. Due to the subjective nature of qualitative research and potential difficulties in critiquing the qualitative studies retrieved. Qualitative literature was appraised using Kennelly (2011) framework (Table 6.7, page XVII), which provided a detailed tool to evaluate each study's relevance and rigour, being a key indicator of quality. To critically appraise the quantitative studies Duffy's (1985) critical appraisal tool (Table 6.8, page XIX) was chosen to determine the credibility of each study, a tool which provides a clear format and has been previously used by the author. The researcher's critical evaluation of the appraisal tools used is provided on page XXII. The strengths, limitations and findings of each study are discussed in Chapter 2.

Qualitative Research Critical Appraisal tool

(Kennelly 2011:18-19)

Yes-1, No- 0, Undetermined (UD) – 0

Table 6.7: Kennelly's qualitative critical appraisal tool

Research Design	**Quick 2013**	**Kneebone et al. 2006a**	**Farmer et al. 2011**	**Smith, Kane & Milne 2006**	**Gray et al. 2010**
The study's purpose and research aims are clearly stated.	1	1	1	1	1
Qualitative methods of inquiry are appropriate for the study aims. (The research sought to understand, illuminate, or explain the subjective experience or views of those being researched in a defined context or setting).	1	1	1	1	1
The authors discussed why they decided to use qualitative	1	1	0	1	0
	3/3	**3/3**	**2/3**	**3/3**	**2/3**
Sampling					
Participant selection is clearly described and appropriate	0	1	1	1	1
The sample size is discussed and justified.	1	1	1	1	1
	1/2	**2/2**	**2/2**	**2/2**	**2/2**
Data collection					
Data collection methods are clearly described and justified	1	1	1	1	1
The methods are appropriate given the study aims and research questions	1	1	1	1	1
	2/2	**2/2**	**2/2**	**2/2**	**2/2**
Data analysis					
The analytic process is clearly described	1	1	1	1	1
All relevant data were taken into account	1	1	1	1	1
The authors considered/discussed contradictory evidence and data	1	1	1	1	1
The study included triangulation (namely, comparison of different sources of data re: the same issue).	1	1	1	1	1
Triangulation produced convergent conclusions	1	1	1	0	1
If "no," was this adequately explained?				1	
Study findings were generated by more than one analyst	0	1	1	1	0
	5/6	**6/6**	**6/6**	**6/6**	**5/6**
Findings/Results					
There is a clear statement of the findings.	1	0	1	1	1
The study findings are discussed in	1	1	1	1	1

Research Design	**Quick 2013**	**Kneebone et al. 2006a**	**Farmer et al. 2011**	**Smith, Kane & Milne 2006**	**Gray et al. 2010**
terms of their relation to the research questions posed					
The findings appear credible	1	1	1	1	1
Sufficient data are presented to support findings	1	0	0	1	1
Potential researcher biases are taken into account	1	1	1	0	0
Conclusions are explicitly linked with exhibits of data	1	0	0	1	1
	6/6	**3/6**	**4/6**	**5/6**	**5/6**
Research value					
Study findings contribute to the current knowledge base	1	1	1	1	1
Findings can reasonably be expected to inform current practices or policies.	1	1	1	1	1
These contributions are discussed by the authors	1	1	1	1	1
The authors identified new research areas	1	0	1	1	1
The authors discussed how the research findings could be used and for what populations	1	0	0	1	1
	5/5	**3/5**	**4/5**	**5/5**	**5/5**
Research design					
Enough descriptive detail was included to allow readers to make their own judgments about potential transferability to other settings	1	1	1	1	1
	1/1	**1/1**	**1/1**	**1/1**	**1/1**
Score:	**23/25**	**20/25**	**21/25**	**24/25**	**21/25**

Quantitative critical appraisal tool

Duffy's 1985, research appraisal checklist (Cutcliffe and Ward 2007:41-43)

Scale: 1 2 3 4 5 6 NA (1 is poorly defined and 6 is defined fully)

Research design abbreviation: *MM- Mixed Methodology;*DS- Descriptive Survey
*CS- Cross-sectional Survey

Table 6.8: Duffy's quantitative critical appraisal tool

	Title	**Williams and Ritsema (2014)**	**White & Round (2013)**	**Moorthy et al. (2006)**	**Cheang et al. (2009)**	**Gokani et al. (2016)**
	*	DS	MM	CS	CS	DS
1	Title is readily understood	6	6	4	4	4
2	The title is clear	6	6	4	4	4
3	The title is clearly related to the content	6	6	2	2	4
		18	**18**	**10**	**10**	**12**
2	**Abstract**					
4	The abstract states the problem, and where appropriate, hypotheses clearly and concisely	5	6	1	6	2
5	The methodology is identified and described briefly	5	6	1	6	3
6	The results are summarised	0	6	1	6	4
7	The findings and/or conclusions are stated	5	6	1	6	4
		15	**24**	**4**	**24**	**13**
3	**Problem**					
8	The general problem of the study is introduced early in the report	6	6	6	6	6
9	Questions to be answered are stated precisely	6	6	6	6	6
10	Problem statement is clear	6	6	6	6	6
11	Hypotheses to be tested are stated precisely in a form that permits them to be retested	NA	NA	NA	NA	NA
12	Limitations of the study can be identified	6	6	1	1	1
13	Assumptions of the study can be identified	1	6	1	4	1
14	Pertinent terms are/can be operationally defined	NA	NA	NA	4	6
15	Significance of the problem is discussed	6	6	6	6	6
16	The research is justified	6	6	6	6	6
		37	**42**	**32**	**35**	**38**
4	**Review of the literature**					

	Title	Williams and Ritsema (2014)	White & Round (2013)	Moorthy et al. (2006)	Cheang et al. (2009)	Gokani et al. (2016)
17	Cited literature is pertinent to the research topic	6	4	1	4	6
18	Cited literature provides rationale for the research	6	4	1	6	
19	Studies are critically examined	4	0	1	6	4
20	Relationships of the problem to previous research is made clear	5	4	6	6	6
21	A conceptual framework/theoretical rationale is clearly stated	6	0	1	1	4
22	The review concludes with a brief summary of relevant literature and its implications to the research problem under study	4	0	2	4	1
		31	**12**	**12**	**27**	**21**
5	**Methodology Part A: Subjects**					
23	Sampling population (frame) is described	4	6	6	4	4
24	Sampling method is described	6	6	6	4	6
25	Sampling method is justified (especially for non-probability sampling)	4	6	1	4	6
26	Sample size is sufficient to reduce type II error	1	NA	6	1	1
27	Possible sources of sampling error can be identified	1	4	1	1	1
28	Standards for the protection of subjects are discussed	1	6	1	1	1
		17	**28**	**21**	**15**	**19**
	Methodology Part B: Instruments					
29	Relevant reliability data from previous research are presented	6	1	1	6	1
30	Reliability data pertinent to the present study are reported	6	1	1	2	1
31	Relevant previous validity data from previous research are presented	1	1	1	6	1
32	Validity data pertinent to present study are reported	6	1	1	1	1
33	Methods of data collection are sufficiently described to permit judgment of their appropriateness to the study	6	1	4	6	1
		25	**5**	**8**	**21**	**5**
	Methodology Part C: Design					
34	The design is appropriate to the study question/hypothesis	6	6	6	6	6

	Title	Williams and Ritsema (2014)	White & Round (2013)	Moorthy et al. (2006)	Cheang et al. (2009)	Gokani et al. (2016)
35	Proper controls are included where appropriate	NA	NA	NA	NA	NA
36	Confounding/moderating variable is/can be identified	NA	NA	NA	NA	NA
37	The description of the design is explicit enough to permit replication	6	1	1	6	1
		12	**7**	**7**	**12**	**7**
6	**Data Analysis**					
38	Information presented is sufficient to answer research questions	6	4	6	4	4
39	The statistical tests used are identified and obtained values are reported	6	1	6	6	6
40	Reported statistics are appropriate for hypotheses/research question	6	1	6	1	6
41	Tables and figures are presented in an easy to understand, informative way	6	2	6	6	1
		24	**8**	**24**	**19**	**17**
7	**Discussion**					
42	The conclusions are clearly stated	6	4	6	5	3
43	The conclusions are substantiated by the evidence presented	6	4	4	5	3
44	Methodological problems in the study are identified and discussed	6	1	1	1	1
45	Findings of the study are specifically related to the conceptual/theoretical basis of the study	6	6	6	5	6
46	Implications of the findings are discussed	6	6	4	5	4
47	The results are generalised only to the population on which the study is based	6	3	6	6	6
48	Recommendations are made for further research	6	1	1	1	4
		40	**25**	**28**	**28**	**27**
8	**Form and style**					
49	The report is clearly written	4	4	5	5	4
50	The report is logically organised	5	4	5	5	4
51	The tone of the report displays an unbiased, impartial, scientific attitude	6	5	2	5	2
		14	**13**	**12**	**15**	**10**
Overall category score =		**226**	**182**	**158**	**206**	**169**

Score 205-306-Superior paper
Score103-204-Average paper
Score 0-102-Below average paper

Result: Superior studies had limitations based on methodology subject sampling criteria in both studies

Critical evaluation of the critical appraisal tools used

Two appraisal tools were used to assist the researcher in objectively critically appraising, as this researcher is a novice. Duffy's (1985) tool was used to identify the strengths and limitations of quantitative studies. Whilst it had been used previously, in hindsight it was extremely long and its length possibly did not yield better results. Similarly, the researcher chose to use Kennelly (2011) to overcome subjectivity in qualitative designs. However, this tool was also very long and items which are associated with qualitative design such as reflexivity were not included. Therefore, the researcher felt the scores did not accurately reflect her interpretation of the study's findings. The researcher's feelings concur with Dixon-Woods et al. (2007) who reviewed structured appraisal tools and found no better consistency in the appraisal of qualitative studies. Crowe and Sheppard (2011) suggest this reflects the lack of validation and reliability when tools are constructed. In the future the researcher will consider more wisely the critical appraisal frameworks before utilising them.

Appendix 5: Researcher ontology and epistemology perspective

Ontology is the philosophical beliefs of a social reality, whilst epistemology is how as a researcher, reality is known (Parahoo 2014). According to Holloway and Todres (2003:347) it is important that the researcher provides clarity on their perspective when exploring research since this can influence the research question and presentation of findings. The researcher works as a NMP within acute healthcare in England and sought to understand the development and integration of NMP roles within the UK. According to (Walliman 2006:190) research which attempts to examine and describe an aspect of the "world" uses a scientific approach attempting to explain events by deduction. This type of inquiry stems from a realist ontological perspective (Parahoo 2014). Whist realism offers objectivity to understand truths, critical realism acknowledges outside influences can affect the data. The researcher's aim was to objectively gather data as part of a national survey, which is considered positivist (Moule and Goodman 2014). Positivism reflects the "truths" of the world developed by sociologist Comte (Maltby et al. 2010), an approach using data to understand and describe a problem. However, according to Trochim (2006) a post-positivism approach takes a more logical approach, understanding some truths can be established, yet acknowledging imperfection. Post-positivism can incorporate other types of approaches to assist in confirming and constructing more sound truths within a natural context. Similarly, a contemporary pragmatic paradigm also stems from a realist perspective, holding a degree of scepticism, believing that the ontological reality is multifaceted being shaped by experiences and therefore changes depending upon different interpretations. Both post-positivism and pragmatist researchers favour neither qualitative nor quantitative

approaches, but believe in using the most appropriate methodology to solve/answer the problem being researched.

Commencing nursing in the early 1980's, I have seen extensive changes in nursing and healthcare agenda. Initially, my career was primarily solely patient-centred working as a nurse in clinical practice. Therefore, my beliefs were focused on patient experiences and subjectivity and I would have considered myself an interpretivist (Guba and Lincoln 1989). However, my professional career within healthcare has advanced significantly during the last ten years, through Higher Education and latterly in clinical practice developing, leading and managing a team of NMPs. In undertaking this role I have experienced the challenges and changes of healthcare transformation. Consequently, my learning and experience has developed, swaying between novice and expert competence (Benner 1984) as my career progressed. Similarly, my ontological, epistemological and theoretical viewpoints have changed along the research continuum from interpretivist to post-positivism and pragmatism. Currently I hold a pragmatist stance, therefore a variety of approaches were considered when designing the research study to explore NMP roles within the UK.

Appendix 6: Postal and Telephone methods of data collection

According to (Dillman, Smyth and Christian 2014:351) a well-constructed postal survey can obtain a 50% response rates. However, a number of advantages and disadvantages are shown in Table 6.9. Given the size and nature of the study the disadvantages were more likely to affect this survey. Consequently a postal questionnaire was not utilised.

Table 6.9: Advantages and disadvantages of postal questionnaire (Bryman 2016)

Advantages of postal questionnaire	Disadvantages of postal questionnaire
Literature reports higher return rates	Difficulty obtaining postal addresses to NMP, with potential breach of data protection if sourced from professional organisations
Letters can be considered a more personal approach	Large paper questionnaires could be overwhelming to respondents
No need for digital information technology	Large survey would ensure significant cost in stationary and postal charges including returns envelopes
	Potential for incomplete returns due to questionnaire fatigue of large questionnaire and re-routing of irrelevant questions more tedious for responder
	Potential for data inputting errors by researcher

Telephone surveys were also considered; Dillman, Smyth and Christian (2014: 259) suggests telephone surveys can effectively collect data. Table 6.10 further illustrates several advantages and disadvantages which affect telephone surveys. Again given the size of this study, it was considered impractical to expect NMPs or Chief Nurse/Nursing Directors to schedule time to respond during busy shifts, meal breaks or outside work, to participate in survey completion. Obtaining personal telephone numbers from respondents to undertake data collection outside

working hours would have breached data protection legislation. Therefore telephone surveys were dismissed.

Table 6.10: Advantages and disadvantages of telephone survey (Fink 2005)

Advantages of telephone survey	Disadvantages of telephone survey
Immediate response, high completion rate	Requires retrieval of large number of telephone numbers
Ability to clarify data on collection	Responder needs to allocate sufficient time to participate
Ability to verify authenticity of responder	Responder needs confidential space to participate in telephone conversation
	Potential for data inputting errors

Appendix 7: Study A: Organisation's semi-structured questionnaire

This questionnaire has been **divided into 6 sections** to enable various professionals to complete each section prior to submission. I have provided **suggested professionals who may be able to complete each section are identified in brackets**.

Section 1- Organisation and workforce data (HR/Workforce manager)

Section 2- Development of Non-Medical Practitioners (NMP) role (Clinical lead or Modern Matron)

Section 3 - Recruitment of NMPs (HR/Clinical lead or Modern Matron)

Section 4 – Integration and Clinical Governance in relation to NMP roles (Clinical lead or Modern Matron)

Section 5 – Education of NMPs (Educational lead or Clinical lead or Modern Matron)

Section 6 – Evaluation of NMP role (Clinical lead or Modern Matron)

This online document can be accessed at various time intervals before submission.

If you prefer to complete a word/pdf document, please contact myself, Jenny Abraham via email jenny.abraham@nhs.net

Please complete and return this questionnaire by **31st August 2016**

Section 1 – Organisation and workforce data

What is the name of your Trust?
(This information will be excluded from publication)

_____

1.1 Which best describes your hospital's location in England?
Please tick only one option

- o North West
- o North East
- o West Midlands
- o East Midlands
- o South West
- o South East

1.2 Which best describes your type of hospital?
Please tick all that apply

- o NHS Acute hospital
- o District General Hospital
- o Private/Independent
- o Foundation Trust
- o Teaching Hospital
- o Non-teaching Hospital
- o Other - please specify

1.3 Based on inpatient beds; how large is your hospital?*
Please tick only one option

- o <50
- o 51-100
- o 101-150
- o 151-250
- o 251-500
- o 501-750
- o 751-1000
- o 1001-1250
- o 1251- 1500
- o 1501-1750
- o 1751-2000
- o ≥2001

1.4a Does your hospital currently employ Non-Medical Practitioner roles such as Surgical Care Practitioner (SCP), Perioperative Specialist Practitioner (PSP), or Physician Assistant/Associate roles within your hospital?
Please tick only one option

- o Yes
- o No

1.4b If No, is the hospital considering recruiting Non-Medical Practitioners in the future?

- o Yes
- o No

If No---Re-routed to finish

1.5a If Yes, please indicate which category of Non-Medical Practitioner you have e considering employing within your hospital/organisation?
Please tick all that apply

- o Surgical Care Practitioner (SCP)
- o Perioperative Specialist Practitioner (PSP)
- o Physician Assistant/Associate (PA)
- o Physician Assistant in Anaesthesia (PA-A)
- o Surgical First Assistant (SFA)/Advanced Scrub Practitioner (ASP)
- o No Non-Medical Practitioner roles are employed
- o Other – please specify

1.5b What grade are the non-medical practitioners employed on?
Please tick all that apply

	AfC Band 6	**Afc Band 7**	**Afc Band 8a**	**Afc Band 8b**	**Afc Band 8c**	**None Employed**	**Other**	**If other, please state in box below**
Surgical Care Practitioner (SCP)								
Perioperative Specialist Practitioner (PSP)								
Physician Assistant/Associate (PA)								
Physician Assistant in Anaesthesia (PA-A)								
Surgical First Assistant (SFA)/Advanced Scrub Practitioner (ASP)								

Other, please include further information in comment box, such as the numbers of NMP employed on different grades or other NMP and their employing grade

1.6 Please include any additional comments on the organisational or workforce data related to the NMP role, such as full time, part-time roles *(Optional)*

_____
_____
_____

Section 2 – Development of Non-Medical Practitioner (NMP) Role

2.1. What were the main factors which initiated the development of the non-medical practitioner roles within your hospital/organisation? *Please tick all that apply*

- o Response to service need
- o Redesign of service
- o Reduction of junior doctors from the deanery
- o Development of new service
- o Extension of team skill mix
- o Reduction of workforce costs
- o Reduction of waiting lists
- o Improve service delivery
- o Reduce A&E waiting targets
- o Promote interprofessional working
- o Developing career pathways
- o Following Government initiatives such as National Practitioner Programme
- o Introduction of European Working Time Directive
- o Not Known
- o Other – please specify

2.2 Which individual/s led / are leading the development of the non-medical practitioner role? *Please tick all that apply*

- o Hospital Board
- o Clinical/medical Director
- o Educational lead
- o Nursing Director
- o Individual department manager
- o Consultant – Surgical/Medical
- o Individual employee
- o Not known
- o Other – please specify

2.3 Was/is the introduction of the non-medical practitioner role supported by a business plan? *Please tick one option only*

- o Yes
- o No
- o Not known
- o Other – please specify

2.4 How was/is the non-medical practitioner role communicated to staff within your organisation? *Please tick all that apply*

- o Flyers
- o Internal website
- o All user e-mail
- o Working party/group
- o Conference
- o Modern Matron/team meetings
- o Not known
- o Other – please specify

2.5 Please include any additional comments on the development of NMP role *(Optional)*

Section 3 – Recruitment of the Non-Medical Practitioner (NMP)

3.1 Please indicate the <u>minimum educational qualification</u> required when recruiting to non-medical roles?
Please tick all that apply

	Registered General Nurse	Registered Operating Department	Certificate Level	Diploma level	Degree level	Masters level	Post Grad Biomedical sciences	Post Grad Diploma	No minimum criteria	Other*
Surgical Care Practitioner (SCP)										
Perioperative Specialist Practitioner (PSP)										
Physician Associate (PA)										
Physician Assistant in Anaesthesia (PA-A)										
Surgical First Assistant (SFA)										
Advanced Clinical Practitioner (ACP)										

*Other – please specify

3.2 Please indicate if any <u>specialist qualification</u> was required when recruiting non-medical roles? *Please tick all that apply*

- Surgical Care Practitioner (Degree level)
- Surgical Care Practitioner (Masters level)
- Perioperative Specialist Practitioner (PG Diploma)
- Physician Assistant/Associate (PG Diploma)
- Physician Assistant in Anaesthesia (PG Diploma)
- Surgical First Assistant/ Advanced Scrub Practitioner
- No criteria applied
- Other – please specify

3.3 Please indicate the <u>minimum level</u> of healthcare experience required during the recruitment process of a non-medical practitioner, in years?
Please tick only one option

- Less than 3 years
- 3-5 years
- More than 5 years
- No minimum limit specified
- Other – please specify

3.4 How likely is your organisation to <u>recruit non-medical practitioner</u> roles in the future? *Please tick one option per row*

NMP	**Very Unlikely**	**Unlikely**	**Unsure**	**Likely**	**Very Likely**
Surgical Care Practitioner (SCP)					
Perioperative Specialist Practitioner (PSP)					
Physician Associate/Assistant (PA)					
Physician Assistant in Anaesthesia (PA-A)					
Surgical First Assistant (SFA)/Advanced Scrub Practitioner (ASP)					
Other					

3.5 Additional comments on recruitment of non- medical practitioner role. Please include additional NMP roles you may consider/ have recruited, including any specific qualification, experience required *(optional)*

Section 4 – Integration and Clinical Governance

4.1 Under which <u>workforce structure</u> are/will the non-medical roles be incorporated? *Please tick only one option*

- o Medical Team
- o Ward/nurse staffing
- o Theatre staffing
- o Other – please specify

4.2 Who is the non-medical practitioner's <u>line manager</u>?
Please tick only one option

- o Consultant Anaesthetist/Physician/Surgeon
- o Ward/Theatre Manager
- o Modern Matron/Senior Nurse
- o Nurse Consultant
- o AHP Consultant
- o General Manager
- o Nursing Director
- o Not known
- o Other – please specify

4.3 Please select the <u>clinical governance frameworks</u> which your organisation has/is developing specifically for the non-medical practitioner roles?
Please tick all that apply

- o Job description
- o Job Person Specification
- o Procedures/policies/protocols/guidelines
- o Competency package
- o Clinical supervision/mentoring
- o Other – please specify

4.4 Who undertakes/will undertake the <u>clinical supervision</u> of the non-medical practitioner? *Please tick only one option*

- o Consultant Anaesthetist/ Physician/ Surgeon
- o Modern Matron/Senior Nurse
- o Consultant Nurse/AHP
- o Another Non-Medical Practitioner
- o Unknown
- o Other

4.5 Did your organisation undertake a <u>risk assessment</u> prior to the non-medical practitioner commencing?

- o Yes
- o No

4.6 Please include any <u>additional comments</u> on the introduction and clinical governance of NMP role (optional)

Section 5 – Education for Non-Medical Practitioner (NMP) role

5.1 Are all non-medical practitioners employed within your organisation provided the opportunity to undertake a nationally recognised educational programme? *Please tick only one option*

- o Yes
- o No
- o Unknown
- o Other – please specify

5.2 Is there an educational budget within your organisation to fund non-medical practitioner (NMP) training? *Please tick only one option*

- o Yes
- o No
- o Unknown

5.3 In your organisation's opinion is university based education important for these roles? *Please choose/circle only one option*

Strongly Disagree, Disagree, Undecided, Agree, Strongly agree

5.4 Which educational courses are most commonly funded for the NMP roles? Tick all that apply. *Optional*

- o Advancing Practice
- o Surgical Care Practitioner
- o Research based courses (MRes, MPhil/PhD)
- o Physician Associate
- o Physician Assistant in Anaesthesia
- o Surgical First Assistant
- o Other, *please specify*

5.5 Please use this space to provide any additional comments on the education of the Non-Medical Practitioner role (optional)

_____
_____
_____
_____

Section 6 – Evaluation of Non-Medical Practitioner Roles

6.1a. Has/is your organisation evaluated/evaluating the non-medical practitioner role?

- Yes
- No
- Not yet, but considering it
- Not known

6.1b If **Yes**, please identify if the non-medical practitioner was evaluated against any of the following criteria? *Please tick all that apply*

- Discharge rates
- Improved ordering of investigations
- Improved team working
- Junior doctor training
- Length of A&E waiting times
- Length of clinic waiting lists
- Length of operating waiting list
- Length of stay
- Readmission rates
- Not aware of any evaluation
- Other – please specify any other methods of evaluating the NMP role

6.2. How would you rate the value of the non-medical practitioner role, using the following statements "The NMP role…..?
Please choose only one option per statement

	Strongly disagree	**Disagree**	**Uncertain**	**Agree**	**Strongly agree**
Provides continuity to patient care					
Provides additional skills to the team					
Provides consistent member to the team					
Supports other nursing and allied health care professionals					
Increases the efficiency of the service					
Maintains safe staffing levels					
Has caused conflict with other health professionals					
Negatively impacts junior doctor training					
Provides a knowledgeable practitioner					

	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Improves prompt ordering of investigations					
Provides effective clinical decision making					
Requires constant clinical supervision					
Scope is limited by protocols and procedures or regulations					

6.3. Please provide any additional comments regarding the benefits of the NMP role (*Optional).*

_____
_____
_____

6.4. Please provide any additional comments regarding the challenges/limitations of the NMP role (*Optional).*

_____
_____
_____

6.5. Please provide additional comments regarding the NMP roles, which has not been included?

Thank you

Appendix 8: Study B: Non-Medical Practitioner semi-structured questionnaire

This questionnaire has been divided into 10 sections; please allow 20 minutes to fully complete the questionnaire.

You will be able to access this survey at multiple times prior to submission; previously entered data will be automatically saved between pages.

The sections below outline the type of information required

Section1- Demographics

Section 2- Implementation of the NMP role

Section 3- Recruitment

Section 4- Clinical

Section 5- Educational and Development

Section 6- Clinical Governance

Section 7- Team Working

Section 8- Communication of NMP role

Section 9- Informing patients

Section 10- Perceptions of the NMP role

This questionnaire should be **submitted before 30th September 2016**

*For the purpose of this survey a Non-Medical Practitioner is classified as a **qualified healthcare professional** who is employed in the United Kingdom acute or private/independent healthcare sector in an extended/advanced/new role having additional responsibilities and may have a title such as Surgical Care Practitioner, Surgical Nurse Practitioner, Perioperative Specialist Practitioner, Surgical First Assistant, Physician Assistant/Associate, Cardiac Surgical Assistant or Laparoscopic nurse/practitioner; roles may have other titles.*

*This survey specifically **excludes** Emergency Care/Nurse Practitioners, Advanced Nurse Practitioners, Endoscopists and Clinical Nurse Specialists.*

Section 1: Demographics

Having read the above definition

1.1 Are you currently employed as a NMP? route

- Yes-re-route to 1.3
- No

1.2 Have you previously been employed as NMP? route

- Yes
- No –route to end

1.3 What is the title of your Non-Medical Practitioner role?

- Surgical Care Practitioner (SCP)
- Perioperative Specialist Practitioner (PSP)
- Surgical First Assistant (SFA)
- Physician Assistant/Associate (PA)
- Physician Assistant/Associate Anaesthesia (PA-A)
- Other –please specify

1.4 Which year did you commence working as a NMP?

(Please answer in whole number of years e.g. 1999 or 2006)

1.5 How many years have you worked as a NMP?

(Please answer in whole number of years e.g. 1, 5, 10)

1.6 What is your gender?

- Male
- Female

1.7 What is your working contract? *(Please tick ALL options that apply)*

- o Part-Time
- o Full time
- o Secondment
- o Other

1.8 What type of working shift pattern do you undertake as a Non-Medical Practitioner? (*Please tick All that apply)*

- o Monday-Friday (8-4 or 9-5 type shift)
- o Evenings
- o Nights
- o Weekends
- o On-calls
- o Other-please specify

1.9 Which term best describes the type of organisation which employs you? (Please tick all options that apply)

- o NHS Trust
- o NHS Foundation Trust
- o Private/independent Hospital
- o District General Hospital
- o Diagnostic Treatment Centres
- o GP practice
- o Community Hospital
- o Teaching Hospital
- o Non-teaching Hospital

1.9.1 What is the geographical region of your employing organisation in England?

- o North East England
- o West Midlands England
- o East Midlands England
- o South West England
- o South East England
- o North West England
- o Northern Ireland
- o Scotland
- o Wales
- o Other

1.9.2 What is the name of your employer?

This will be anonymised before publication

1.9.3 How many <u>years</u> of clinical experience did you have as a registered professional <u>prior to being employed as a NMP</u>?

- Less than 3 years
- More than 3 years and up to 5 years
- More than 5 years and up to 9 years
- More than 10 years and up to 15 years
- More than 15 years and up to 20 years
- More than 20 years

1.9.4 What type of clinical environment did you work in prior to undertaking NMP role? (Please tick ALL that (apply)

- A&E
- Assessment unit
- Community nurse
- Critical care/ITU/HDU
- Education/practice development
- Medical care
- Non-healthcare background
- Operating Theatre
- Out-Patient Department
- Practice Nurse
- Science graduate
- Student
- Ward nurse
- Other – please specify

1.9.5 Which clinical speciality do you work within? (Please tick All that apply)

- Acute Medicine
- Anaesthetics
- Breast
- Cardiology

- Cardio-thoracic surgery
- Colorectal
- Community
- Emergency Department
- ENT (Ear, Nose and Throat)
- General Surgery
- Gerontology
- Gynaecology
- HPB (Hepato-Pancreato-Biliary)
- Intensive care/High Dependency Unit/Critical care
- Laparoscopic
- Maxilo-facial
- Neurology
- Neurosurgery
- Obstetric
- Onco-plasty
- Ophthalmology
- Orthopaedics
- Paediatrics
- Plastics
- Radiology
- Vascular
- Other-Please specify

Section 2: Development of the Non-Medical Practitioner (NMP) role

2.1 In your opinion what were the main organisational drivers to the development of the NMP role? (Please tick no more than 3)

- o Developing a career pathway
- o Development of new service
- o Extension of team skill mix
- o Following Government initiatives such as National Practitioner Programme
- o Improve service delivery
- o Introduction of European Working Time Directive
- o Promote inter-professional working
- o Redesign of service
- o Reduce A&E waiting targets
- o Reduction of junior doctors from the deanery
- o Reduction of waiting lists
- o Reduction of workforce costs
- o Response to service need
- o Other – please specify

2.2 How many years has <u>your NMP role</u> been in existence within your organisation?

Please specify_____

Section 3: Recruitment

3.1 What is your professional background? (*Please tick only one option)*

- o Biomedical/ Biological Scientist
- o Nurse
- o Occupational therapist
- o Operating Department Practitioner (ODP)
- o Paramedic
- o Physiotherapist
- o Other – please specify

3.2 Who is your registering professional body?

(*Please tick ALL options that apply)*

- o HCPC
- o NMC
- o Managed Voluntary Register with RCoP
- o Managed Voluntary Register with RCoA
- o Other please specify

3.3 Why did you consider applying for this NMP role?

_____

_____

3.4 Do you think the organisation will replace your NMP role if you leave the position? (Please circle)

Disagree strongly, Disagree, Not sure, Agree, Agree strongly

Section 4: Clinical Duties and responsibilities

Clinical Environment

4.1. How frequently do you work in these clinical areas?

Clinical Area	**Never**	**Rarely** (Monthly or less)	**Occasionally** (at least once a week)	**Frequently** (at least twice a week)	**Very Frequently** (Daily)
OPD/GP clinic- new appointments					
OPD/GP clinic- follow-up appointments					
Operating department					
Ward					
Emergency Department/A&E					
Pre-operative (anaesthetic) assessment Clinic					
Teaching/educational seminars (outside clinical area)					
Multidisciplinary Team meetings					
ITU/HDU					
Acute/Emergency medical/surgical assessment clinic					

Section 5: Education

5.1 What Agenda for Change grade is your NMP role employed at?

(Tick only one option)

- 5
- 6
- 7
- 8a
- 8b
- 8c
- 8d

5.2 What is your highest academic qualification? (Tick only one option)

- PhD/MPhil
- MSc/MA/MRes
- Postgraduate Diploma
- Postgraduate Certificate
- BSc/ BA,
- Undergraduate Diploma
- Registered Operating Department Practitioner (National Vocational Qualification)
- Registered General Nurse Certificate

5.3 Have you completed a nationally recognised educational non-medical practitioner programme? (Tick only one option)

- Yes
- No – route to open question- reasons for not completing course
- Currently undertaking training
- Application submitted

5.4 Which nationally recognised specialist qualification have you completed?

- Advanced Nurse Practice/Advanced Practice (ANP/AP)
- Advanced Clinical Practice (ACP)
- Perioperative Specialist Practitioner (PSP)
- Physician Assistant Anaesthesia (PA-A)
- Physician Assistant/Associate (PA)
- Surgical Care Practitioner (BSc level)
- Surgical Care Practitioner (MSc level)
- Surgical First Assistant (SFA) /Advanced Scrub Practitioner (ASP)
- Other – please specify

5.5 Where did you undertake your recognised qualification?

- Brighton ad Sussex University
- Buckingham New University
- Canterbury and Christ Church University
- Cardiff University
- Coventry
- De-Montfort University Leicester
- Edge-Hill University
- Hull and York Medical School
- Imperial College London
- Plymouth University Peninsula School of medicine
- Sheffield Hallam University
- St George's- University of London
- Teesside University
- University of Aberdeen
- University of Anglia Ruskin
- University of Birmingham
- University of East Anglia
- University of Greenwich
- University of Manchester
- University of Plymouth
- University of Reading
- University of Surrey
- University of West England
- University of Wolverhampton
- University of Worchester
- Other: please specify

5.6 As a NMP please rate the following statements regarding your education and development, in your opinion …..?

	Disagree Strongly	Disagree	Unsure	Agree	Agree Strongly
I already had the experience, skills and qualifications before commencing the NMP role					
From the outset I was provided with the education and training required to undertake					

	Disagree Strongly	Disagree	Unsure	Agree	Agree Strongly
the NMP role					
I do not consider there is a need to attain education and training for this NMP role					
The opportunity to attain the skills required to undertake the NMP role was limited/difficult					
I had adequate clinical support/supervision to develop your skills					

5.7 As a NMP please rate the following statements regarding your role as an educator, in your opinion….?

	Disagree Strongly	Disagree	Unsure	Agree	Agree Strongly
I participate in education and training of nursing staff					
I participate in education and training of junior medical staff					
I contribute to the education and professional development of healthcare students					
I teach formal sessions at the university					
I undertake patient education/information sessions					
I disseminate at conferences/educational events					

Section 6: Clinical Governance

6.1 Who is your clinical supervisor/mentor? (Tick only one option)

- Consultant- Medical/surgical/anaesthetist
- Consultant Nurse
- General Manager
- General Practitioner (GP)
- Modern Matron
- Theatre manager
- Non-Medical Practitioner
- Do not have a clinical supervisor/mentor
- Other – please specify

6.2 What is the professional status of your line manager? (Tick only one option)

- Medically qualified doctor
- Nurse
- Operating Department Practitioner
- Other – please specify

6.3 Please rate these clinical governance statements regarding your NMP role?

	Disagree Strongly	Disagree	Undecided	Agree	Agree strongly
My job description clearly and accurately defines my role					
My grade is aligned to my role and job description according to Agenda for Change					
There are relevant organisational policies/procedures/protocols /guidelines for my NMP role					
There is a clear organisational structure for NMP role					
There was no clear clinical supervision/mentorship on commencing the role					
My job plan is varied					
I attend an annual Personal Development Review					

	Disagree Strongly	Disagree	Undecided	Agree	Agree strongly
I am not aware of a risk assessment prior to commencement of NMP role					

6.4 As a NMP, how often do you…. ?

	Never	**Rarely** (Monthly or less)	**Occasionally** (at least once a week)	**Frequently** (at least twice a week)	**Very Frequently** (Daily)
Undertake/participate in research/audit					
Undertake direct staff management					
Deal with complaints, clinical incidents/adverse events					
Write protocols/guidelines					

Section 7: Team working

7.1 How would you currently rate your perception of the NMP role in terms of the following statements…?

	Disagree Strongly	Disagree	Undecided	Agree	Agree strongly
I feel my NMP role is respected/valued by other health professionals					
My job has a clear structure for career progression					
The size of my workload requires regular unpaid overtime					
My job is demanding dealing with difficult situations					
My work is motivating and challenging					
My senior colleagues make all the clinical decisions within the team					
Initially health professionals displayed hostility towards my role					
I have sufficient skills and knowledge to undertake the role					
I am given shared duties and responsibilities within the clinical team					

7.2 Please provide additional comments regarding whether you perform any duties outlined under direct supervision?

7.3 How would you rate the perceived contribution of Non-Medical Practitioner role with the following statements "The NMP role…..?

	Disagree Strongly	Disagree	Uncertain	Agree	Agree strongly
Improves the patient experience by providing continuity in care					
Provides additional skills to the team					
Provides a consistent member to the team					
Requires constant clinical supervision					
Caused conflict with other health professionals					
Improves service provision/delivery					
Fills a deficit thus maintaining safe staffing levels					
Interferes with medical staff training and development					
Provides expert and knowledgeable					
Lacks clinical decision making responsibilities					
Improves prompt requesting of investigations					
Improves prompt interpretation of investigations					
Supports/compliments junior doctor training					

7.4 Please additional any comments regarding clinical working in this section?

Section 8: Communicating the NMP role

8.1 In your opinion how informed do you feel other people are regarding the NMP role within your organisation?

	No Information/ awareness	Limited information/ awareness	Don't know	Some information/ awareness	Fully informed/ aware
Medical Consultants					
Staff Grade/SpR					
Junior doctors					
Allied Health Professionals					
Advanced Nurse Practitioners/Specialist Nurses					
Senior Nurses					
Junior Nurses					
Healthcare support workers					
Allied Health Professionals					
Genera/practice Managers					
Educators					
Reception staff/secretaries					
Medical Students					
Nursing students					
ODP/AHP students					

8.2 How informed do you feel your NMP role is generally perceived within the organisation?

Section 9: Informing Patients

9.1 How are patients informed about your NMP role?

(Tick All options that apply)

- Information leaflet provided
- Name badges worn
- Uniform worn
- No formal discussion
- Posters displayed
- Verbally explained
- Other – please specify

9.2 When describing your NMP role to patients, what terms do you use?

- Allied Health Professional (AHP)
- An assistant to the anaesthetist
- I do not expand/elaborate on my role within the team
- Non-medical practitioner (NMP)
- Nurse
- Operating Department Practitioner (ODP)
- Role similar to a junior doctor
- Specialist Nurse/Practitioner
- Your job title
- Other – please specify

9.3 To what degree do you feel patients understand the NMP role?

- Fully understand
- Some understanding
- Unsure
- Little understanding
- No understanding

Section 10: Perceptions of the NMP role

10.1 What do you perceive are the current constraints/challenges to your NMP role? Optional

10.2 What would you consider are the main factors facilitating/enabling the introduction of the NMP role within your organisation/service? Optional

10.3 Has your NMP role changed since you commenced the role, in terms of acceptability, clinical duties, responsibilities, speciality or other?

- Yes
- No

If yes, in what way do you think the role has changed?

Please complete the following **unique identifier** (this will be removed one week after submission of the questionnaire)

Please use the first 3 letters of your surname the last three numbers of your mobile/home telephone and first 2 letters of your city/town/village

Thank you for participating

If you wish to withdraw your questionnaire after submission please contact **Jenny Abraham QUOTING** your **unique identifier**. This facility is only available for one week after submission

For further information, withdrawal and to request a copy of the findings please contact Jenny Abraham

Email: jenny.abraham@nhs.net

Appendix 9: Health Research Authority (HRA) outcome

Go straight to content.

NHS
Health Research Authority

MRC Medical Research Council

Is my study research?

To print your result with title and IRAS Project ID please enter your details below:

Title of your research:

National Mapping of non-medical practitioner roles (Surgical Care Practitioner, Perioperative Specialist Practitioner and Physician Assistant/Associate) within

IRAS Project ID (if available):

You selected:

- **'No'** - Are the participants in your study randomised to different groups?
- **'No'** - Does your study protocol demand changing treatment/ patient care from accepted standards for any of the patients involved?
- **'No'** - Are your findings going to be generalisable?

Your study would NOT be considered Research by the NHS.

You may still need other approvals.

Researchers requiring further advice (e.g. those not confident with the outcome of this tool) should contact their R&D office or sponsor in the first instance, or the **HRA** to discuss your study. If contacting the HRA for advice, do this by sending an outline of the project (maximum one page), summarising its purpose, methodology, type of participant and planned location as well as a copy of this results page and a summary of the aspects of the decision(s) that you need further advice on to the HRA Queries Line at **HRA.Queries@nhs.net**.

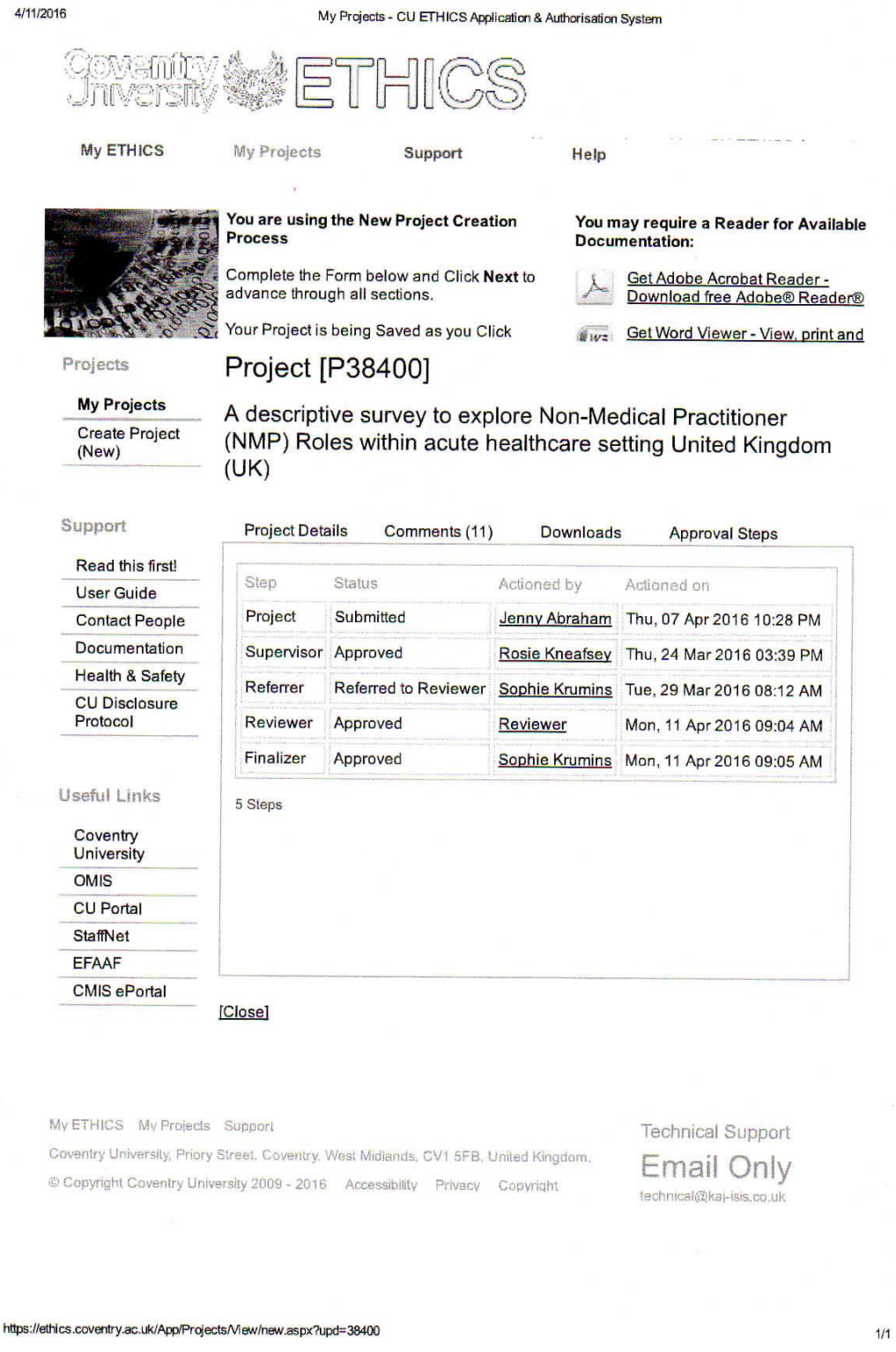
For more information please visit the **Defining Research** leaflet

Follow this link to start again.

Print This Page

NOTE: If using Internet Explorer please use browser print function.

Appendix 10: Coventry University Ethics Approval



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Useful Links

- Coventry University
- OMIS
- CU Portal
- StaffNet
- EFAAF
- CMIS ePortal

Project [P38400]

A descriptive survey to explore Non-Medical Practitioner (NMP) Roles within acute healthcare setting United Kingdom (UK)

Project Details | Comments (11) | Downloads | Approval Steps

Step	Status	Actioned by	Actioned on
Project	Submitted	Jenny Abraham	Thu, 07 Apr 2016 10:28 PM
Supervisor	Approved	Rosie Kneafsey	Thu, 24 Mar 2016 03:39 PM
Referrer	Referred to Reviewer	Sophie Krumins	Tue, 29 Mar 2016 08:12 AM
Reviewer	Approved	Reviewer	Mon, 11 Apr 2016 09:04 AM
Finalizer	Approved	Sophie Krumins	Mon, 11 Apr 2016 09:05 AM

5 Steps

[Close]

My ETHICS My Projects Support

Coventry University, Priory Street, Coventry, West Midlands, CV1 5FB, United Kingdom.

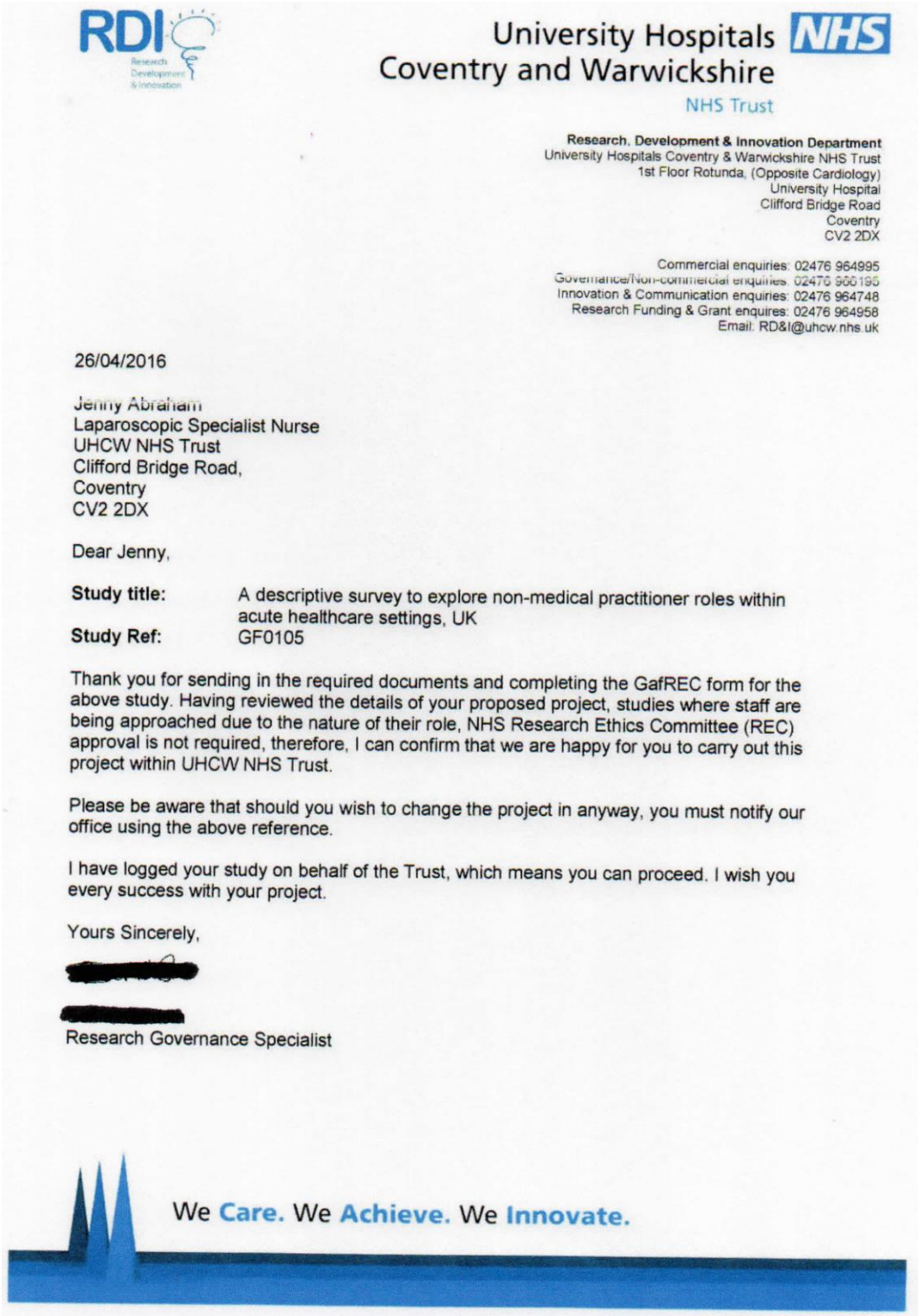
Technical Support

Email Only

technical@kaj-isis.co.uk

https://ethics.coventry.ac.uk/App/Projects/View/new.aspx?upd=38400 1/1

Appendix 11: Letter from local NHS Research Ethics Committee: outcome



RDI Research Development & Innovation

University Hospitals Coventry and Warwickshire NHS Trust

NHS

Research, Development & Innovation Department
University Hospitals Coventry & Warwickshire NHS Trust
1st Floor Rotunda, (Opposite Cardiology)
University Hospital
Clifford Bridge Road
Coventry
CV2 2DX

Commercial enquiries: 02476 964995
Governance/Non-commercial enquiries: 02476 966190
Innovation & Communication enquiries: 02476 964748
Research Funding & Grant enquires: 02476 964958
Email: RD&I@uhcw.nhs.uk

26/04/2016

Jenny Abraham
Laparoscopic Specialist Nurse
UHCW NHS Trust
Clifford Bridge Road,
Coventry
CV2 2DX

Dear Jenny,

Study title: A descriptive survey to explore non-medical practitioner roles within acute healthcare settings, UK
Study Ref: GF0105

Thank you for sending in the required documents and completing the GafREC form for the above study. Having reviewed the details of your proposed project, studies where staff are being approached due to the nature of their role, NHS Research Ethics Committee (REC) approval is not required, therefore, I can confirm that we are happy for you to carry out this project within UHCW NHS Trust.

Please be aware that should you wish to change the project in anyway, you must notify our office using the above reference.

I have logged your study on behalf of the Trust, which means you can proceed. I wish you every success with your project.

Yours Sincerely,

[redacted]

[redacted]
Research Governance Specialist

We Care. We Achieve. We Innovate.

Appendix 12: Study A Organisation's participation information

This information was transposed to page 1 of online survey which was distributed via Bristol Online Survey

"Study to explore Non-Medical Practitioner roles within Acute and Independent healthcare organisations in England"

The purpose of this study is to explore Non-Medical Practitioner (NMP) roles within Acute and Independent healthcare settings in United Kingdom (UK).

I am a student at Coventry University and work as a NMP within surgery at University Hospitals Coventry and Warwickshire NHS Trust. This study is part of a Masters in Clinical Research supported by Coventry University and funded by the National Institute for Health Research (NIHR).

The survey also has the support of the Association for Perioperative Practice (AfPP), Association of Physician Assistants in Anaesthesia (APAA) and Association of Cardiothoracic Surgical Assistants (ACSA) *(subject to written confirmation from various professional body boards).*

It consists of a **descriptive exploratory online survey** containing generic questions regarding the types and number of Non-Medical Practitioner (NMP) roles such as Surgical Care Practitioners (SCP), Surgical Nurse Practitioner, Perioperative Specialist Practitioner (PSP), Physician Assistants/Associates (PA) and Physician Assistants in Anaesthesia (PA-A) who are employed within your organisation. The questionnaire contains 6 sections including organisation, workforce data, development, recruitment, implementation, clinical governance and evaluation of the NMP roles. It is anticipated that the survey will take 20 minutes to complete.

Completing this survey is voluntary. I appreciate providing some of this information may be challenging. Comments text boxes have been included if you wish to provide additional information/explanation. I have included suggested professionals whom maybe appropriate to complete each section, although this will vary depending upon each organisation. However, your support in providing a more complete picture is greatly appreciated, as this is the first time such a comprehensive survey has been completed in England.

The information you provide on behalf of your organisation will remain confidential and information submitted will be anonymised after data analysis. Findings will **not** be identifiable by your organisation but by geographical region for example, North

West, England. It is intended that the findings will be published as part of a national survey, and will support the evidence base of the future direction of training and implementation for Non-Medical Practitioners within healthcare organisations within England.

The Health Research Authority has classified this study as service evaluation. As a student at Coventry University, Ethical Approval has been attained through the Research Ethics and Governance Committee reference P38400. The study has also been registered with the local research and development department at University Hospitals Coventry and Warwickshire NHS Trust reference GF0105.

Thank you for taking the time to consider this request. A copy of the findings will be sent to all participating organisations at the end of the study. It is hoped that organisations will find this useful in supporting development of the non-medical practitioner workforce.

By responding to the questionnaire, your consent to take part in the study is assumed and that you agree to the use of anonymised data in publications.

If you have any questions, would like further information or a copy of the findings please to contact myself, Mrs Jenny Abraham via email address: jenny.abraham@nhs.net

Appendix 13: Study B Non-Medical Practitioner participation information

This information was transposed to page 1 of online survey which was distributed via Bristol Online Survey

Study Title

"A survey to explore Non-Medical Practitioner (NMP) roles within acute and independent healthcare organisations in United Kingdom"

Purpose of the Study

The purpose of this study is to explore non-medical practitioner roles within healthcare care settings in United Kingdom (UK). I work as a NMP in surgery at UHCW NHS Trust and I am undertaking a Masters in Clinical Research supported by Coventry University and funded the National Institute for Health Research (NIHR). The survey also has the support of the Association for Perioperative Practice (AfPP), United Kingdom Association for Physician Assistant/Associate (UKAPA) and Association of Cardiothoracic Surgical Assistants (ACSA).

Why have I been chosen?

You are invited to take part if you are currently employed in a non-medical practitioner role such as Surgical Care Practitioner (SCP), Perioperative Specialist Practitioner (PSP), Surgical First Assistant, Physician Assistant/Associate (PA), Physician Assistant Anaesthesia (PA(A)) or you may also be employed under another title.

Do I have to take part?

Taking part is entirely voluntary you are not required to provide a reason for this decision or make contact with the researcher.

How will consent be obtained?

After reading the information page and before commencing the questionnaire you will be requested to answer the question **"Do you agree to take part in this study", Yes or No**.

If you agree to take part you will be given access to continue the questionnaire.

If you decline you will be directed to the end therefore being unable to view or complete the questionnaire and you will not need to explain your decision.

Can I withdraw from the study?

Yes, whilst the questionnaire is anonymised, a unique identifier created by yourself at the end of the questionnaire will allow withdrawal of your information up to one week after online submission. This can be done by emailing the researcher using the email outlined on the questionnaire.

What do I have to do?

You will be asked to complete a questionnaire online, which is anticipated to take approximately 20-minutes and includes factors relating to development, implementation, recruitment, clinical activity, clinical governance and evaluation for the non-medical practitioner role.

What are the risks associated with this project?

We believe that there are no risks attached to either completing or not completing the questionnaire.

What are the benefits of taking part?

There will be no direct benefits to you as an individual. However, currently there is little published literature regarding non-medical practitioner roles within the United Kingdom. This study aims to publish findings regarding Non-Medical Practitioner roles within England adding to the body of knowledge available, which may influence clinical practice, service and workforce development.

Data protection & confidentiality

Data provided by responding to the questionnaire will be retained on an encrypted portable memory stick which is accessible using a password. Neither you nor your organisation will be identifiable as the data will anonymised after data analysis to maintain confidentiality. Data when published will only identifiable on a regional basis or working title. The anonymised data will be retained for 3 years following completion of the study, after this time frame the data will be deleted. The Health Research Authority has classified this study as service evaluation. As a student at Coventry University, Ethical Approval has been attained through the Research Ethics and Governance Committee reference P38400. This study has also been registered with the local research and development department at University Hospitals Coventry and Warwickshire NHS Trust reference GF0105.

What if things go wrong? What if I want to complain?

It is unlikely anything will go wrong, but if you are unhappy with this study or the researcher please contact my Director of Studies/supervisor [redacted], Principal Lecturer employed at Coventry University Email: [redacted] who will respond to your concerns.

What will happen with the results of the study?

It is intended that the findings will be published but neither you nor your organisation will be identifiable.

Who has reviewed this study?

The study questionnaire has been reviewed by Coventry University Research Support Volunteer Programme (RSVP) and piloted by experienced academics and clinical professionals to test and retest to provide rigour to this questionnaire. According to the Health Research Authority this survey is considered a service evaluation. As a student at Coventry University, ethical approval for this study has been attained through the Research Ethics and Governance Committee. The study has also been registered with the local research and development department at University Hospitals Coventry and Warwickshire NHS Trust.

Further information/contact details of researcher

If you have any questions, would like further information or findings you are welcome to contact Mrs Jenny Abraham, email address: [redacted]